

THE IRON TRADE REVIEW

Vol. LXVI

Cleveland, January 15, 1920

No. 3

Anxious Buyers Bid Up Market

General Prices Continue to Rise as Consumers Press Forward with Their Future Requirements—Production Continues Unsatisfactory—Speedy Satisfaction of Growing Railroad Need of Steel Presents Big Problem—Mills are Choked

HAVING experienced directly the acute shortage of early material, buyers are showing a growing anxiety to protect themselves on their future requirements of iron and steel. As a result they are bidding up prices steadily upon themselves and the market has resolved itself wholly into a sellers' affair. With its obligations expanded over 4,000,000 tons during the past seven months and its production below normal, the steadying influence of the Steel corporation's minimum price policy rapidly is losing effect. Scarcely an independent mill at present is quoting less than \$2 to \$15 per ton above the schedules of the largest interest and this spread is growing each week.

Production however generally continues unsatisfactory and the volume of material offered for sale in any direction is limited. On the present basis of output, most of the more important producers are choked with business for periods varying from three to 12 months. The official termination of the steel strike will effect some improvement in this situation but no great hopes are entertained for much immediate betterment on that score. In some districts, notably Buffalo, a number of the strikers still are refusing to return to work.

Mill Output Held Back

Shortage of steel to accommodate the present rate of finishing operations is more in evidence. One Ohio sheetmaker with 21 mills has been obliged to suspend because of the lack of sheet bars. Some of the plants of the leading sheet and tin plate interest despite the tonnage drawn from the Chicago district are not receiving more than one-half their present steel requirements. Sheet bars have been sold at \$58 mill and even an offer of this figure in the Mahoning valley has brought no response. A tonnage of slabs is pending at \$52 mill.

There is some talk that special dispensation may have to be provided in the case of the railroads if the latter are to obtain the steel necessary to carry out speedily their rehabilitation program. Railroad

demand is heavy. At Chicago 48,000 tons of steel have been placed for car repairs for the New York Central with 30,000 tons about to be closed. A sale of 15,000 tons of tie plates was made there. Eastern rail orders now closed or pending call for 350,000 to 375,000 tons, including 150,000 tons for the New York Central lines, 150,000 tons for western systems and 28,000 tons for the Erie.

Foreign Lots Offered

A development of interest in the international market is the offering at New York this week of lots of Belgian structural material. The fact that Belgium's domestic demand is far in excess of the limited production of her mills, however, as is shown by staff reports published in this issue, minimizes the importance of competition from that source. There is a suspicion that it may be German steel that is being offered. Cable reports this week accent the feverish character of the European iron and steel market. British steel prices are being advanced \$4 to \$5 per ton primarily because of the higher railroad freight rates just established.

Eastern mills have taken additional orders for 70,000 tons of ship plates and have declined as much more, as they have become badly congested. Some of the smaller mills have quoted up to 4.50c Pittsburgh.

Close Last Half Iron

Increased buying and inquiry for pig iron for last half have appeared. In the lake districts \$40 furnace for the base grade has been done on some tonnage for that delivery and at Buffalo, \$38 to \$40. More numerous sales for delivery after July 1 are reported in New England and eastern Pennsylvania. First half iron is hard to locate. Basic especially is scarce. The Crucible Steel Co. has closed for 30,000 tons of this grade for first half. Buyers offering \$37 valley for basic have found makers indifferent. In eastern Pennsylvania one steelmaker has purchased 55,000 to 60,000 tons of basic at slightly under \$40 delivered.

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The Steel Strike Ends

FINIS has been written to the steel strike in a way in which it was certain all along it would be written. The strike leaders have proclaimed that their cause is lost and they have lifted all restraint, moral or otherwise from the remnant of their numbers which had remained away from the mills to the last. This number has been comparatively small, as iron and steelmakers generally have been able to increase their operations by degrees until the strike had ceased to be a factor of consequence. At the same time there has been an aggravated shortage of common labor which the official termination of the strike may help to improve.

The steel strike has been lost because of its utter lack of justice and the radical character of its leadership. Viewed in its most important aspects it was more of an uprising against established society than a sincere effort to improve the conditions of the workmen of an industry. The set of principles and demands set forth in behalf of the men largely were of a fictitious character and had little or no basis in truth. The strike was fostered and supported by the worst elements, both the most cunning and the

most ignorant, within and without the ranks of organized labor. No industrial controversy ever received more publicity or afforded the public greater opportunity to judge the facts for itself. In the end this was most fortunate for the country at large since it proved the undoing of the vicious effort of the radical minority to dominate industry. Once the public was given the chance fairly to draw its own conclusions, the outcome was sealed. In view of the widespread publicity which the strike in all its phases received, the charge of the suppression of free speech by the strike leaders falls of its own weight.

Though the cost has been heavy in lost production and in raised costs and prices, the steel strike has served a good purpose. It enabled Judge Gary as spokesman for the iron and steel industry to display a quality of courage and to sound correct principles of economies and social justice before the country of which it stood in immediate need. It brought into the light of day the radicalism with which organized labor had permitted itself to be tainted, and thereby helped to produce a healthy reaction of public opinion against extortionate demands and wild fallacies over business management which has grown with the passing weeks.

Increasing Iron Ore Output

THE most important effort directed at the utilization of measureless tonnages of low-grade ores in the Lake Superior region is represented by the announcement of organized plans to develop the magnetite properties on the east end of the Mesabi range. The efforts of the group of mining engineers and capitalists interested in the project have been watched with interest for some time. The statement that this enterprise now has passed the experimental stage, that a large plant is being built for treating the ore, and that shipments will begin early in 1921, commands special attention. Considerable progress has been made in recent years in concentrating the lean wash ores found on the west end of the Mesabi, and if the ores of the eastern Mesabi can be commercialized by beneficiation a long step will have been taken toward making available the full resources of the Lake Superior district. This long has been the dream of geologists, mining engineers and financiers.

Reserves of iron ore containing 50 per cent or more of iron in the Lake Superior district are estimated at about 2,000,000,000 tons, or sufficient at the present rate of consumption for 33 years. While the estimated reserves in Minnesota in 1919 were 420,000,000 tons more than the reserves estimated in 1907, the companies controlling a large proportion of these deposits have been expending energies toward concentrating the lower grade of ores. This indicates that these companies are preparing for the day, not far distant, when the best ores will have been consumed.

In the area of 10 square miles controlled by the Mesabi Iron Co., it is estimated that there are 300,000,000 tons of magnetite ore within 50 feet of the surface, while there are immense tonnages below this depth, extending down approximately 700 feet, accessible through underground workings. The material to be treated in the magnetic separators is said to contain from 15 to 40 per cent magnetite, and this will yield a low phosphorus bessemer ore averaging 60 per cent or higher in metallic iron. A new development in this connection, is the origination of the magnetic log washer, operating on the principle of the log washers in use on the western Mesabi, but combining the magnetic feature. Preliminary experiments and operations are said to have shown a surprisingly low figure as regards cost, when it is considered that several tons of rock and sand will have to be treated to obtain one ton of commercial ore.

Pioneer work of this kind always is interesting, and in this case it may prove extremely important. The initiative has been taken and, regardless of the immediate success of the enterprise, it will pave the way toward adding a large tonnage to the proved ore reserves of the American iron and steel industry.

Cleaning Gas Electrically

PERHAPS in no other line of industry is electric current of more importance than in the manufacture of pig iron. Depending upon this source of power are practically all of the principal and auxiliary engines, pumps and machines of modern blast furnaces.

One of the more recent applications of electricity to blast furnace operation is for the removal of the dust from the gases. The process is known as electrical precipitaton and holds considerable encouragement for future practice according to the results pointed out on page 213 of this issue. The tests demonstrate that the gas can be cleaned to such a stage that it carries less than one-tenth of a grain of dust per cubic foot. Only when the moisture content falls below 35 grains per cubic foot is it necessary to use water and then only slightly.

In addition to the saving in labor and repairs, greater efficiency is realized from the stoves when using clean gases for combustion than when using gas carrying a high dust content. Maintaining the water vapor content of the gas at a minimum is a factor that leads toward more efficient combustion because the amount of heat carried into the stack increases in proportion to the vapor present.

Inasmuch as the efficient cleaning of blast furnace gas means so much to the iron industry, furnacemen will watch the development of the new method with more than casual interest. From the

Editorial Service

KEEPING faith with its readers under its announcement of Nov. 13, dealing with the establishment of a broadened European editorial service under staff management, THE IRON TRADE REVIEW in this issue begins the publication of weekly iron and steel market reports from France and Belgium. These reports prepared by staff representatives henceforth will become a regular feature of the market pages of this publication. Not only weekly reports transmitted by mail will be published but the important developments in the continental European markets will be carried in the weekly cable dispatched through the European headquarters of THE IRON TRADE REVIEW at London. Later, standing quotations on leading products in France and Belgium which will be revised by cable to the date of publication will be carried similar to those on the British market now appearing weekly. Arrangements are being made to extend this service to cover the German market in like fashion.

The publication of the French and Belgian reports added to those now being presented by mail and cable from Great Britain inaugurates a scale of enterprise in market reporting surpassing that of any other American trade paper. Joined with the superior foreign news service along general lines which now is being rendered its readers, these reports serve to give THE IRON TRADE REVIEW a unique position as a world-wide authority on all commercial and technical developments pertaining to iron and steel.

The building up of an organization at large expense to perform these duties has been conceived and is being executed by THE IRON TRADE REVIEW in conformity with a policy of 100 per cent editorial service to all its patrons. It proclaims the endeavor of THE IRON TRADE REVIEW to keep constantly in close step with the march of commercial events national and international.

incomplete data available it appears that electrical precipitaton is an effective cleaner, but sufficient time has not elapsed to allow investigators to thoroughly study the operating difficulties and the cost of operation and maintenance. Judging from the traditional eagerness with which American iron and steelmakers adopt new ideas, it is safe to predict that electric precipitation will find prompt favor as soon as its practicability for blast furnace gas is well established.

Iron and Steel Prices

Corrected to Wednesday Noon

SCRAP, WAREHOUSE, ORE AND OTHER PRICES ON PAGES 256 AND 258

Pig Iron

Bessemer, valley	39.00
Bessemer, Pittsburgh	40.40
Basic, valley	37.00
Basic, Pittsburgh	38.40
Basic, delivered, eastern Pa.	40.00
Malleable, Pittsburgh	42.40
Malleable, Chicago, furnace	40.50
Malleable, Buffalo, furnace	41.25
Malleable, delivered eastern Pa.	43.00 to 44.50

FOUNDRY IRON SILICONS

No. 2 Northern	1.75 to 2.25
No. 2 Southern foundry	1.75 to 2.25
No. 2X Eastern and Virginia	2.25 to 2.75
No. 1X Eastern	2.75 and up
No. 1 Chicago	2.25 to 2.75
No. 2 foundry Eastern	1.75 to 2.25

No. 1X, eastern delivered Phila.	\$45.10 to 46.10
No. 1X, Buffalo	41.00 to 45.00
No. 1 foundry, Chicago, furnace	41.25
No. 2 foundry, valley, Pittsburgh	41.40
No. 2 foundry, Buffalo	38.00 to 42.00
No. 2 foundry, Boston	44.40 to 44.90
No. 2 foundry, Chicago furnace	40.00
No. 2 foundry, Ironton furnace	40.00
No. 2 foundry, Cleveland furnace	40.00
No. 2X, eastern, del. Phila.	44.10 to 44.60
No. 2X, eastern, N. J., tidewater	44.10 to 44.60
No. 2X, eastern, Boston	46.15
No. 2X, foundry, Buffalo furnace	39.25 to 43.25
No. 2 foundry, del. Philadelphia	43.10 to 43.60
No. 2 foundry, N. J., tidewater	43.10 to 43.60
No. 2 southern, Birmingham	37.00 to 38.00
No. 2 southern, Cincinnati	40.60 to 41.60
No. 2 southern, Chicago	42.00 to 43.00
No. 2 southern, Phila.	43.50 to 44.50
No. 2 southern, Cleveland	42.00 to 43.00
No. 2X, eastern, Boston	44.10 to 44.60
No. 2 southern, St. Louis	40.25 to 41.75
Virginia, No. 2X, furnace	41.25 to 41.50
Virginia, No. 2X, Philadelphia	45.35 to 45.60
Virginia, No. 2X, Jersey City	45.65 to 45.90
Virginia, No. 2X, Boston	45.95
Gray forge, valley, Pittsburgh	40.40
Gray forge, eastern Pa.	41.50
Silveries, 8%, furnace	50.00
Ohio Silveries, 8%, Chicago	53.80
Tennessee Silveries, 8%, Chicago	55.65
Low phos. standard, Phila.	51.80
Low phos. Lebanon, furnace	42.00
Low phos. standard, Pittsburgh	46.40
Charcoal, Superior, base grade, Chicago	47.50

Coke

(At the ovens)

Connellsville furnace	\$6.00
Connellsville foundry	7.00
Pocahontas furnace	8.00
Pocahontas foundry	8.00
New River foundry	8.00
New River furnace	8.00
Wise county furnace	7.25
Wise county foundry	8.25

Ferroalloys

Ferromanganese, 80 per cent, delivered, domestic metal	\$140.00
Ferromanganese, 80 per cent, English c.l.f. Atlantic ports	130.00 to 140.00
Spiegel, 18 to 22 per cent furnace spot	45.00 to 46.00
Ferrosilicon, 50 per cent, spot and contract, delivered	80.00 to 85.00
Ferrotungsten, standard, per pound contained, furnace	1.00 to 1.10
Ferrochrome, 60 to 70 per cent chromium, 6 to 8 per cent carbon, per pound contained, maker's plant	20c to 21c
Ferrovandium, 30 to 40 per cent per pound contained, according to analysis	\$6.00 to \$7.00
Ferro carbon-titanium, carloads, producers plant, per net ton	200.00
Bessemer, ferrosilicon, 10 per cent	59.50
Bessemer, ferrosilicon, 11 per cent	62.80
Bessemer, ferrosilicon, 12 per cent	66.10

Prices at Jackson and New Straitsville, O.

Semifinished Material

BILLETS AND BLOOMS

(4 x 4 inch)

Open-hearth, Pittsburgh	45.00 to 50.00
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Open-hearth, Philadelphia	59.10 to 64.10
Bessemer, Pittsburgh	45.00 to 50.00
Bessemer, Youngstown	45.00 to 47.00
Forging, Pittsburgh	60.00 to 65.00
Forging, Philadelphia	69.10 to 74.10

SHEET BARS

Open-hearth, Pittsburgh	\$50.00 to 58.00
Open-hearth, Youngstown	50.00 to 58.00
Bessemer, Pittsburgh	50.00 to 58.00
Bessemer, Youngstown	50.00 to 58.00

SLABS

Pittsburgh and Youngstown	48.00 to 50.00
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WIRE RODS AND SKELP

Wire rods, Pittsburgh	\$52.00 to 65.00
Grooved skelp, Pittsburgh	2.45c
Sheared skelp, Pittsburgh	2.65c

Shapes, Plates and Bars

(In cents per pound)

Structural shapes, Pittsburgh	2.45c to 2.75c
Structural shapes, Philadelphia	2.72c to 3.00c
Structural shapes, New York	2.72c to 3.02c
Structural shapes, Chicago	2.72c
Tank plates, Pittsburgh	2.65c to 3.25c
Tank plates, Chicago	2.72c
Tank plates, Philadelphia	2.90c to 3.75c
Tank plates, New York	2.92c to 3.77c
Bars, soft steel, Pittsburgh	2.35c to 3.25c
Bars, soft steel, Chicago	2.62c
Bars, soft steel, New York	2.62c to 3.77c
Bars, soft steel, Philadelphia	2.60c to 3.75c
Bar iron, common, Phila.	3.75c to 4.00c
Bar iron, common, Chicago	3.00c
Bar iron, common, Cleveland	3.25c
Bar iron, common, New York	3.77c to 4.02c
Bar iron, common, Pittsburgh	3.75c
Hard steel bars, Chicago	(nom.) 2.85c

Rails, Track Material

Standard bessemer rails, mill	\$45.00 to 55.00
Standard open-hearth rails, mill	47.00 to 57.00
Relaying rails, light, St. Louis	40.00 to 46.00
Relaying rails, Pittsburgh	40.00 to 43.00
Angle bars, Pittsburgh base	2.75c
Angle bars, Chicago base	3.75c
Light rails, 25 to 45, mill	2.45c to 2.75c
Spikes, railroad, Pittsburgh	3.50c to 3.60c
Track bolts, Pittsburgh	5.50c
Track bolts, Chicago	4.62c
Track spikes, Chicago	3.82c
Tie plates, Chicago	2.75c to 2.90c

Wire Products

(100 lbs. to jobbers, carloads; retailers, 5c more)

Wire nails, Pittsburgh	3.25c to 4.25c
Plain wire, Pittsburgh	3.00c to 3.50c
Galvanized wire, Pittsburgh	3.70c to 4.20c
Barbed wire, painted, Pitts.	3.40c to 3.90c
Barbed wire, galvanized, Pitts.	4.10c to 4.60c
Cut nails, Pittsburgh l. e. l.	3.195c
Coated nails per count keg, Pitts.	2.85c to 4.00c
Polished staples, Pittsburgh	3.40c to 4.25c

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Galvanized staples, Pittsburgh	4.10c to 4.95c
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Chain, Piling, Strip Steel

(In cents per pound)

Chain, 1 in. proof coil, Pitts.	5.75c
Sheet piling, base, Pittsburgh	2.55c to 2.85c
Cold rolled strip steel, hard coils, 1 1/2 inches and wider by 0.100 inch and heavier, base per 100 pounds, 5.65c to 6.00c.	

Sheets

(In cents per pound)

SHEET MILL BLACK	
No. 28, open-hearth, Pitts.	4.35c to 5.75c
No. 28, bessemer, Pitts.	4.35c to 5.75c
No. 28, open-hearth, Chi.	4.62c

TIN MILL BLACK	
No. 28, open-hearth, Pitts.	4.35c to 5.50c
No. 28, bessemer, Pitts.	4.35c to 5.50c

GALVANIZED	
No. 28, open-hearth, Pitts.	5.70c to 7.00c
No. 28, bessemer, Pitts.	5.70c to 7.00c
No. 28, open-hearth, Chi.	5.97c

BLUE ANNEALED	
No. 10, open-hearth, Pitts.	3.55c to 4.50c
No. 10, bessemer, Pitts.	3.55c to 4.50c
No. 10, open-hearth, Chi.	3.82c
No. 10, open-hearth, Phila.	3.80c to 4.55c

Full sheet schedule page 256.

Tin Plate

(Per 100 lb. box)

Tin plate, coke base, Pitts.	\$7.00
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Iron and Steel Pipe

Base Pittsburgh to Jobbers Carloads

Base, Pittsburgh	Black Galv.	Per cent off
3/4 to 3 in., butt, steel	57 1/2	44
3/4 to 3 in., butt, iron	34 1/2	18 1/2

Full pipe schedule page 256.

Boiler Tubes

Steel, 3 1/2 to 4 1/2 inches, l. e. l.	40 1/2
Iron, 3 1/2 to 4 1/2 inches, e. l.	18

Cast Iron Water Pipe

Without War Freight Tax

Class B Pipe	
Class A pipe is \$2 higher than Class B	
Four-inch, Chicago	\$69.80
Six-inch and over, Chicago	66.80
Four-inch, New York	70.30
Six-inch and over, New York	67.30
Four-inch, Birmingham	63.00
Six-inch and over, Birmingham	60.00

Hoops, Bands, Shafting

Hoops, Pittsburgh	3.05c to 3.50c
Bands, Pittsburgh	3.05c to 3.50c
Hot rolled strip steel, Pitts. stamping quality	3.50c to 3.75c
Cold finished steel bars, Pitts., base	3.60c to 4.305c

Rivets

Structural rivets, Pittsburgh	4.15c
Boiler rivets, Pittsburgh	4.25c
Rivets 7/8 in. and smaller Pitts.	50 off

Nuts and Bolts

(Prices f. o. b. Pittsburgh)

CARRIAGE BOLTS	
(3/4 x 6 inches, smaller and shorter)	
Roller thread	45-5 off
Cut thread	40-5 off
Larger and longer	30-10 off
MACHINE BOLTS	
(3/4 x 4 inches, hot pressed nuts)	
Roller thread	50-7 1/2 off
Cut thread	40-10-5 off
Larger and longer	40 off
Cold pressed semifinished hexagon nuts 3/4 in. and larger	60-10-5 off
Cold pressed semifinished hexagon nuts 1/2 in. and smaller	70-10-5 off
Gimlet and cone point lag screws	50-10 off
NUTS	
Hot pressed, square blank	2.50c off
Hot pressed, square tapped	2.25c off
Hot pressed, hexagon blank	2.50c off
Hot pressed, hexagon tapped	2.25c off
Cold pressed, square blank	2.25c off
Cold pressed, square tapped	2.50c off
Cold pressed, hexagon blank	2.50c off
Cold pressed, hexagon tapped	2.25c off

Prices Present and Past

(Yesterday, a month ago, three months ago and a year ago)

Prices are those ruling on the largest percentage of sales at the dates named.

	Prices		Average prices						
	Jan. 14, 1920	Dec. 1919	Oct. 1919	Jan. 1919	Jan. 14, 1920	Dec. 1919	Oct. 1919	Jan. 1919	
Bessemer, valley, del. Pitts.....	\$40.40	\$36.65	\$29.35	\$33.60	Iron bars, Cleveland.....	\$3.25	\$3.25	\$2.75	\$3.32
Bas.c, valley, delivered, Pittsburgh...	38.40	35.40	27.15	31.40	Iron bars, Chicago mill.....	3.00	2.80	2.68	3.13
*No. 2 Foundry, Pittsburgh.....	41.40	38.15	28.85	32.40	Beams, Chicago.....	2.72	2.72	2.72	3.07
*No. 2 Foundry, Chicago, furnace.....	40.00	38.30	27.55	31.00	Beams, Pittsburgh.....	2.65	2.50	2.45	2.80
Lake Superior charcoal, Chicago.....	47.50	41.00	33.15	38.70	Beams, Philadelphia.....	2.80	2.745	2.695	3.045
Malleable, valley.....	41.00	36.40	29.15	31.50	Tank plates, Pittsburgh.....	3.00	2.70	2.65	3.00
Malleable, Chicago.....	40.50	38.80	28.00	31.50	Tank plates, Chicago.....	2.92	2.92	2.92	3.27
*Southern, No. 2, Birmingham.....	38.00	35.15	27.45	32.25	Tank plates, Philadelphia.....	3.50	3.125	2.895	3.245
*Southern Ohio, No. 2, Ironton.....	40.00	36.55	28.80	31.00	Sheets, blk., No. 28, Pittsburgh.....	5.00	4.35	4.35	4.70
Basic, eastern del., eastern Pa.....	40.00	35.75	27.90	33.90	Sheets, blue anid., No. 10, Pittsburgh.....	4.00	3.55	3.55	3.90
*No. 2X, Virginia, furnace.....	41.25	38.25	30.35	35.25	Sheets, galv., No. 28, Pittsburgh.....	6.25	5.70	5.70	6.05
*No. 2X, eastern del., Philadelphia.....	44.35	40.75	32.00	36.15	Wire nails, Pittsburgh.....	4.25	3.95	3.25	3.50
Gray forge, valley del., Pittsburgh.....	40.40	30.00	27.65	31.40	Connellsville furnace coke.....	6.00	6.25	4.15	5.90
Ferromanganese, 80 per cent, delivered.....	140.00	122.50	110.00	217.00	Connellsville foundry coke.....	7.00	7.15	5.60	7.00
Bessemer billets, Pittsburgh.....	50.00	45.00	39.30	43.50	Heavy melting steel, Pittsburgh.....	26.00	24.65	20.00	20.80
Bessemer sheet bars, Pittsburgh.....	55.00	48.50	43.20	47.00	Heavy melting steel, eastern Pa.....	24.75	22.85	19.55	19.00
Open-hearth sheet bars, Pittsburgh.....	55.00	48.50	43.20	47.00	Heavy melting steel, Chicago.....	24.75	21.00	18.80	19.20
Open-hearth billets, Pittsburgh.....	50.00	45.00	39.30	43.50	No. 1 wrought, eastern Pennsylvania.....	34.00	30.75	27.00	29.50
Steel bars, Pittsburgh.....	3.00	2.85	2.35	2.70	No. 1 wrought, Chicago.....	28.50	27.60	22.00	23.50
Steel bars, Chicago.....	2.62	2.62	2.62	2.97	Rerolling rails, Chicago.....	33.50	31.30	26.80	22.30
Iron bars, Philadelphia.....	3.75	3.375	2.745	3.745					

*1.75 to 2.25 silicon. **2.25 to 2.75 silicon. †70 per cent.

Large Basic Tonnages are Closed

Eastern Steelmaker Takes 55,000 to 60,000 Tons, Crucible Steel Co. 30,000 Tons and Ohio Plant 15,000 Tons—\$37 Valley Refused for Basic—Last Half

Selling of Iron Is Growing

Pittsburgh, Jan. 13.—The Crucible Steel Co. of America has closed on a big tonnage of basic, delivery to start immediately and to run over the remainder of the first half. The tonnage involved is approximately 30,000 and calls for shipments starting with February of 5000 tons monthly. The business went to a western Pennsylvania merchant interest but carries the valley freight rate of \$1.40 per ton. Monthly settlements on the basis of monthly averages of the trade papers are called for. This is the largest single sale of basic in this district in several months, or since the same furnace interest closed on a contract for an indefinite period, calling for 5000 tons a month for the first half of this year and 10,000 tons a month for the second half. Sizable sales of basic for first half have been made at \$37, valley, but this price probably could not be duplicated. This grade of iron once more is getting considerably out of line with the other grades, for 1000 tons of standard bessemer was sold for February-March delivery to a Pittsburgh district maker of ingot molds at \$39, valley furnace, while smaller tonnages have gone as high as \$40. The latter price is well established as the base for round lots of No. 2 foundry (1.75 to 2.25 silicon). Small tonnages of the latter grade have been sold for first quarter at \$40.50 to \$41, western Pennsylvania furnace. It is understood that the Westinghouse Electric & Mfg. Co. is seeking 1500 tons of foundry for early delivery to its Cleveland works. As far as can be learned, the American Steel Foundries has bought less than half the tonnage of basic for which it recently inquired. No recent business has been done in

gray forge but makers are asking \$39, valley furnace, for this grade in round lots. Much activity recently has been observed in low phosphorus, one interest reporting sales aggregating 3000 tons for first half for Pittsburgh district delivery. Eastern makers of copper-free low phosphorus are reported to be quoting up to \$48, furnace, or about \$51.50, delivered Pittsburgh. A valley maker of this grade has been taking first half business at \$45, furnace, or \$46.40, delivered here. While the coke situation still is somewhat of a restrictive influence on blast furnace operations, the situation is better than recently. Several stacks which lately were banked from time to time, now are operating steadily. The stack of the Stewart Iron Co., Sharon, Pa., was blown in last week and the Carnegie Steel Co. last Thursday lighted its No. 1 stack at Bellaire, O., and expects to blow in No. 2 soon.

Boston Sales Show Advance

Boston, Jan. 12.—With inquiries increasing and with the available supply of pig iron still small, the tightness in the New England market continues. Prices in all districts are stiffening and advances are indicated by many sales. A sale of 400 tons of 2.25 to 2.75 silicon to a Massachusetts consumer was made at \$43, Buffalo. However, other sales from the Buffalo district establish a market close to \$41, furnace, for the base grade. In at least one instance \$1 below this figure was done. In the case of several eastern Pennsylvania furnaces the established price is \$42 for 1.75 to 2.25 silicon for first half. Available tonnage at this figure, however, is rapidly decreasing.

One sale of 3000 tons of No. 2X eastern (2.25 to 2.75 silicon) was made for second half at \$45.50, furnace. Several medium sized lots for prompt delivery were placed at \$45, furnace. Virginia iron continues to be offered at approximately \$40 base, but only small tonnages are available. The Pulaski furnace entered the market last week with a limited tonnage for March-June delivery at \$40.25, base, with the usual differentials for other grades.

With the inventory period practically over foundries are showing more interest in placing future orders. Second half business is developing and many large consumers have already placed fair sized orders for that position. A Boston consumer is asking 5000 tons for second half and 1000 tons for first half, and a western Massachusetts consumer 10,000 tons for the balance of the year. It is understood the General Electric Co. has not yet made its purchases of approximately 10,000 tons for its two Massachusetts plants for which inquiry was made a week ago.

Eastern Demand Increases

New York, Jan. 12.—While several eastern and Virginia furnaces have gone into blast lately or will go into blast shortly, their output is more than overbalanced by the blowing out of certain stacks for repairs, also it is regarded as likely that a large eastern steel company will be out of the market for an indefinite period as a seller of foundry iron. This interest has been classed as a regular maker of foundry iron for the market, but because of the fuel shortage, it is likely that it will concentrate on steel-making iron and hence will have little

foundry iron to sell during the first half. Demand for foundry iron in this district has broadened out considerably during the past week. Considerable tonnage has been sold for all deliveries this year. One of the interests which bought on a large scale, is a New York state electrical manufacturer. An eastern pipemaker closed for several thousand tons for third quarter.

While the market is firm there is a smaller amount of business going at \$44 and \$45, eastern Pennsylvania furnace, for 2.25 to 2.75 silicon. Most of the current business is being entered at \$42 to \$42.50, furnace, for 1.75 to 2.25 and \$43 to \$43.50 for 2.25 to 2.75 silicon. A considerable round tonnage of Alabama iron was sold in this district the past week for first half at \$40, Birmingham, for 1.75 to 2.25 silicon. On malleable iron \$42, eastern Pennsylvania furnace, seems minimum. A round tonnage of off-basis was sold during the week at \$39, eastern Pennsylvania furnace. Bessemer iron can be had at \$40, eastern Pennsylvania furnace. A round tonnage of Virginia 2.75 to 3.25 silicon running high in manganese was sold for export at \$47, furnace. A round tonnage of northern 2.25 to 2.75 silicon was for export at \$45.

Big Basic Tonnage Sold

Philadelphia, Jan. 13.—A large eastern Pennsylvania consumer bought basic the past week in an amount estimated at 45,000 to 50,000 tons but the total may have been 60,000 tons. This iron mostly is for second quarter delivery. The prices in most cases were slightly lower than \$40 delivered. This represented the most important single buying in pig iron market here since the large purchase of basic of American Bridge Co. three months ago. Although there is plenty of basic left the price made on this business could not be duplicated. Fair selling has characterized the foundry market here the past week for both first and second half which was done largely at \$42 eastern Pennsylvania furnace for No. 2 plain (1.75 to 2.25 silicon), \$43 to \$43.50 for No. 2X (2.25 to 2.75 silicon). Considerable central Pennsylvania iron was sold at \$42 furnace for No. 2 plain and \$43.25 for No. 2. There was comparatively active selling of Virginia iron at \$40 for No. 2 plain with the usual differentials for silicon and manganese. One furnace has sold a substantial tonnage of No. 2X and higher silicon at 25 cents higher than the above level for March-June delivery. Considerable malleable was sold the past week for various deliveries this year at prices ranging from \$43 to \$45.50 delivered eastern Pennsylvania. Considerable gray forge was sold around \$40.50 delivered, eastern Pennsylvania. A price of \$48 eastern furnace was the last done on standard low phosphorus but on some inquiry \$49 was named. A considerable tonnage of the latter is under negotiation. A few hundred tons of copper-bearing iron was sold at \$42 furnace and in some cases \$45 has been quoted. The Lavino furnace Co. furnace at Lebanon will be blown in in about two weeks on pig iron but will switch shortly to ferromanganese. The American manganese Mfg. Co. will blow in one of the Dunbar furnaces which has been rebuilt and will alternate it between pig iron and spiegeleisen

while the other Dunbar furnace will continue on ferromanganese. The Alan Wood Iron & Steel Co. blew in its 600-ton furnace on basic Jan. 9 and expects to consume most of this output. Some Buffalo foundry iron has been sold for second half on the basis of \$40 for No. 2 plain. The Pennsylvania railroad is inquiring for 2500 tons of foundry and a large radiator interest wants several thousand tons.

Buffalo Prices Vary

Buffalo, Jan. 13.—One producing interest which last week was selling its second half iron at prices below first half iron, and at the \$40 base, now has increased its second half price to the \$42 base on all foundry sales. The \$42 price is for 1.75 to 2.25, the \$43.25 price for 2.25 to 2.75, and the \$45 price for 2.75 to 3.25 silicon content. This interest reports that it has very little iron for first half, and is not booking second half tonnage to excess, because of the uncertain nature of costs in view of the prospective increase in freight rates. It has no iron for spot delivery. While this company gives its belief that a heavy shortage of iron is impending and calls attention to the fact that up to Jan. 1, only about 45 per cent of the merchant furnaces were in steady operation, and production was between 150,000 and 175,000 tons short up to that time, other producers are not inclined to believe the shortage is extraordinary. Furnace interests who maintain the shortage is not excessive, continue to quote the \$38 base price on first half business and on some second half business. A sale of 1000 tons of 1.75 to 2.25 silicon for the latter period at \$38 is noted. This interest sold a fair sized tonnage of malleable at \$41.25. Basic is held at \$39. The maker first mentioned, has sold some 15,000 tons of iron, he reports. The leading radiator interest has been in the market and has bought 10,000 tons or more of foundry iron for first half.

Last Half Sales Grow

Cleveland, Jan. 13.—Inquiries for last half iron are now coming out freely and some of these are running into good tonnages. This is particularly true of foundries connected with the automobile industry, some of which are asking for 5000 tons or more. Increased selling for last half is noted although producers are not encouraging this business and are trimming inquiries as far as possible as they are uncertain whether they will have enough iron to meet the demands. One producer in lake territory in a week sold 5000 to 6000 tons of assorted business for last half on the basis of \$40, furnace, for 1.75 to 2.25 silicon. This same price is being asked by this interest on scattered sales for first half. Some makers are deliberately avoiding quoting up to \$40, furnace, and have been making sales a shade under that figure. A sale of 1000 tons of No. 2X (2.25 to 2.75 silicon) for first half was made at \$41.25 valley. Local makers are doing practically no selling but would quote at least \$40, furnace, for 1.75 to 2.25 silicon. Small lots of southern Ohio iron for early shipments are being sold into this territory at \$40, furnace, or \$42.40, delivered Cleveland, for No. 2. Basic is indefinite in price in the

absence of sales but is above \$37, furnace. Buyers offering this figure within a week have been refused by the furnaces. The American Steel Foundries is still a prospective purchaser of a round tonnage. It has developed that a northern Ohio steelmaker was a recent buyer of 15,000 tons for first half at \$35, valley, but this sale was negotiated before the last advances. Another northern Ohio steelmaker was a recent buyer of off-basis. Basic is scarce and some steelmakers have been trying to arrange for a supply under a plan to turn back to the seller some of the steel made from this iron. The Canton, O., furnace was blown in Jan. 9, and Furnace B at Toledo is slated to resume in about a week.

South Yields Some Iron

Chicago, Jan. 13.—Local producers of northern pig iron continue to sell only in small lots to regular customers and with great caution, as practically all production for first half has been covered. The market remains steady at \$40, furnace, for 1.75 to 2.25 silicon. That the local production is covered except for a few small tonnages is proven by the efforts of a number of melters to place orders for lots varying from 500 to 700 tons, which have been futile. An inquiry was put out recently by a Chicago manufacturer of machinery for 600 tons of foundry for second quarter. An agricultural implement manufacturer in Illinois is inquiring for 2000 to 3000 tons of foundry for first half. Southern makers are opening their books to some extent and one of the principal producers in the Birmingham district has begun taking further tonnage, disposing of at least 5000 tons in this district within the past few days. Birmingham iron is being quoted at \$40, Birmingham, for silicon 1.75 to 2.25. One of the largest producers which has been selling recently is now out of the market. Most inquiry now being received is for small lots to fill in. Shipments are slow. Present buying is not in the least degree speculative, as melters realize that they should not take on more iron than they will be able to use within the first half. One producer of silveries in the Jackson county district is in blast and another expects to be furnishing material from stock and is willing to sell small quantities for first half.

Little Selling is Possible

Cincinnati, Jan. 14.—The pig iron market is an impossibility. This is the description given by a leading Cincinnati producer today. He declared that the market is a market in name only; that there is no business because producers are unable to meet the ever-increasing demand. Prices, however, continue on an advancing tendency, although there is a disposition on the part of makers to hold them as close to the present level as possible. Things are in such shape that no furnace will give much consideration to anything beyond the first half of the year. Capacity output is well sold up for that period, and some orders have been accepted for the third quarter. Plans for increased production are being considered by a number of manufacturers, but there is little prospect of immediate relief in that direction. Southern iron is difficult to quote exactly in view of the absence of sales, but is

around \$38, southern Ohio No. 2 is quoted at \$40, furnace.

Refuse Orders for Second Half

St. Louis, Jan. 10.—Activity in the pig iron market has subsided, due to the fact that dealers have nothing to dispose of. Several of the larger interests have been trying to buy into the second half, but it is extremely doubtful if the business will be closed at present. Furnaces, especially to the south, are reluctant about dealing far ahead, for the reason that they are uncertain of future production costs, and because they believe that later on they will be able to secure as good prices, if not better, than those now prevailing. The representative of a leading southern producer said today he had inquiries for more than 5000 tons, but has been unable to obtain any part of this from the furnace. This interest went out of the market several weeks ago, when the price for No. 2 Southern (1.75 to 2.25 silicon), was \$35 a ton. Melters are poorly supplied for the first quarter.

New Ore Prices

May Be \$1 a Ton Higher—Vessel Rates Likely to be Advanced

Cleveland, Jan. 13.—Business in the ore market for 1920 is expected to develop next month, and at prices materially higher than those which prevailed last year. While no decision has been made as regards prices, operators are completing their cost sheets, with the probability that new prices will be announced the latter part of this month. These cost sheets are said to show an extremely low profit on the business done in 1919. The general opinion among operators is that the new prices will be approximately \$1 a ton higher.

In this connection the vessel rate on iron ore is still to be determined, but it is understood that some chartering will be done at an early date so that the operators and consumers will understand what the rate is to be before ore contracts are closed. Vessel rates probably will be higher than last year, and it is not unlikely that a return will be made to the level which prevailed in 1918. The latter rates were reduced 20 per cent at the outset of the season of 1919. Iron ore operators are disposed to consider the new rates before making quotations, and in some instances it is said that if a freight rate to lower ports is advanced 20 cents a ton then the operators might accept an advance of but 80 cents, the total to the consumer being \$1.

Certain operators estimate that furnaces drawing their ore supplies from the Lake Superior district will have on hand 17,500,000 tons May 1 as compared with 20,977,000 May 1, 1918, and 20,664,582 May 1, 1919, which estimate, if borne out, would indicate an early movement this year.

A half dozen inquiries appeared in the market during the past week for small tonnages with which to fill out mixtures, and some additional sales were made.

More Coke Plants Sold

Consumers Have Taken Over 1200 Ovens to Protect Themselves From Recurrence of Stringency—Production Still Low—No Spot Available

Pittsburgh, Jan. 13.—By far the most interesting feature of the coke situation is a continuation of the movement of consumers in buying coal lands and coke ovens in an effort to avoid a recurrence of the recent famine of furnace fuel. Following closely on the transfer of the Orient Coke Co., Uniontown, Pa., to the American Coke Corp., acting, according to report, for the Wheeling Steel & Iron Co., and the Midvale Steel & Ordnance Co., is the news that the Hillman Coal & Coke Co., has sold the No. 1 plant of the Thompson Connellsville Coke Co. to the Weirton Steel Co., and E. W. Mudge & Co. It also is reported the ownership of the Katherine works of the Union Connellsville Coke Co., has passed to iron and steel interests and that another group of ovens soon will pass from the merchant to the furnace classification. Merchant ovens in the Connellsville regions, which numbered 14,182, recently, have been reduced by almost 1000 on the transfers known to have taken place. High prices have been paid in all cases, one sale having been made at close to \$5000 per improved acre of coal, the improvements, beside the development of the coal, being the coking ovens. Market conditions are much as they have been recently.

Production remains at a low stage and so much is needed on contract shipments that spot supplies remain almost nil. Car allotments not only are small, but extremely uncertain, some parts of the Connellsville district getting 40 or 45 per cent, while others have been down as low as 10 per cent. The fixed prices mean little so far as spot sales are concerned, for the coke is not available. Lifting of the price limitations at an early date continues to be rumored, but the belief is gaining ground that until the peace treaty is signed and the Lever law automatically ended, present restrictions will remain in force. Coke oven operators who failed to pledge their first half production before the imposition of the price restriction are reported to be shipping to regular customers on extensions of old agreements carrying no price. The price is to be fixed and to be retroactive to Jan. 1, with the ending of price restrictions. Connellsville production of coke for the week ended Jan. 3, is estimated by The Connellsville Courier to have been 237,736 tons as compared with 205,850 tons in the previous week and for the year ended Dec. 31, 1919, 10,289,964 tons, against 16,080,590 tons in 1918.

Buyers Withhold Inquiries

Cincinnati, Jan. 14.—A slight increase is reported in the production of coke, but general conditions remain unchanged both as to the inability of consumers to obtain anything like a sufficient supply to meet demands and as to the car shortage. However, it is said that coke users have decided individually to refrain

from attempting to overcome the situation by crowding the market with clamorous orders, and to let conditions work out themselves. There is a tendency to withhold orders in so far as is possible in the hope that there may result a slight shading from maximum government prices, at which all sales continue to be made.

Anxious for Deliveries

Boston, Jan. 12.—The slump in bee-hive coke production while not directly affecting many of the New England consumers, has caused considerable anxiety and increased demand for shipment. Inquiry for spot foundry coke which was almost nil a week ago has returned to normal and the by-product producers once more are having some difficulty in keeping up deliveries. New England foundries still have large stocks of coke on hand and as coal shipments to by-product producers are holding up well, there seems to be no danger of a coke shortage here. Books have not yet been opened for second half. The spot price is \$11.90.

Need More Coke at St. Louis

St. Louis, Jan. 12.—Inquiries for coke continue to pour in on dealers, while latter's means for supplying the demand have not improved. Users are seeking spot coke and supplies for the first half, while there are also substantial inquiries out for the last half. The latter, however, are receiving scant attention, as none of the ovens is disposed to sell beyond June 30. More cars could be loaded, but the equipment is not to be had. Deliveries also have been curtailed by a heavy snow storm. Current production and the accumulations of the leading by-product interest have served to improve the situation materially, but certain small plants are in great need of coke.

Production Steadily Increasing

Birmingham, Ala., Jan. 13.—Every ton of coke that can be manufactured in this section is in demand. The by-product plant of the Birmingham Coke & By-Products Co., a war-born project, will be ready to operate its 30 koppers ovens in the next few days. The Sloss-Sheffield Steel & Iron Co.'s by-product plant will not be completed for 90 to 120 days. This plant has 160 Semet-Solvay ovens. The Tennessee Coal, Iron & Railroad Co. will complete its last addition of 77 by-product ovens to the Fairfield plant by the middle of the summer.

No Plans Decided

New York, Jan. 12.—While no definite plans yet have been determined on in connection with the spring meeting of the American Iron and Steel institute, it is expected that the meeting will be held in New York, on the fourth Friday and Saturday of May, as usual.

Big Lots of Scrap Sold

Valley and Cleveland Interests Buy 100,000 Tons of Steel in East at \$27 and \$27.50—Market Strengthens Generally

FOR COMPLETE SCRAP PRICES SEE PAGE 258

Philadelphia, Jan. 13.—Purchases of 60,000 tons of heavy melting steel by the Brier Hill Steel Co., Youngstown, O., at \$27.50, delivered, and 30,000 tons by a Cleveland mill at \$27, have caused an excited scrap market in this district. This is noted principally in heavy melting steel but is extending to all other grades. Heavy melting steel scrap has advanced here \$1.50 per ton. The Phoenix Iron Co. bought 5000 tons at \$25, delivered. Every mill in the East is inquiring with no willing sellers. Dealers have refused \$30 for low phosphorus which latter grade has been in big demand the last few days. A keen demand is noted, however, for all items on the list, No. 1 railroad wrought already having sold at \$34, delivered, and cupola cast at \$39, delivered eastern Pennsylvania.

A large shipbuilding corporation has refused an offer of \$24.50 per gross ton, delivered eastern Pennsylvania, for its production of heavy melting steel scrap covering the period of January, February and March.

Increase Prices at Boston

Boston, Jan. 12.—Prices of several grades of scrap iron and steel have advanced during the past week. Cast scrap is in great demand for foundries. The scarcity of No. 1 machinery is bringing No. 2 into greater prominence and the price of the latter grade has advanced to \$32, delivered. Mixtures of No. 1 and No. 2 often sell as high as \$35, or more. Pipe does not seem to be moving and slight concessions have been reported. All other grades, however, have been holding firm. There has been comparatively little movement of heavy melting steel to points outside of New England. A dealer's bid of \$21 on one lot of heavy melting steel which accumulated recently did not secure the metal. Turnings and borings have been more active than heavy melting steel, and the prices of the last few days show an advance of from 50 cents to \$1.

Sympathetic Price Advance

Pittsburgh, Jan. 13.—Although steel manufacturers here are in a hesitant mood in the matter of scrap purchases and the actual turnover is extremely limited, a further advance has taken place in all steel works grades. This anomaly finds explanation in the fact that in the valley districts steel manufacturers are taking on supplies freely and paying relatively high prices. Transfers of heavy melting grades are noted at Youngstown at \$27.50 and of baled sheets at \$24.50 while much difficulty is experienced in getting buyers here to bid more than \$26 for heavy melting steel and over \$22 for baled sheets. These prices measure the maximums

yet obtained on any sizable tonnages. Dealers today would not sell at these prices and freely are talking \$30 for heavy melting grades. Foundry grades, especially cupola cast, are in extremely scant supply. Re-rolling rails are strong and it is reported that sales have been made at higher than \$36 delivered Newark, O., and Huntington, W. Va. Iron axles recently have brought up to \$46, delivered.

Prices Continue to Advance

New York, Jan. 12.—Prices continue to advance in the local scrap market, gains in the majority of descriptions being from 50 cents to a dollar, and in one or two instances, more. Grate bars have made a material gain, the market now being \$25 to \$26. No. 1 machinery and heavy cast went up \$2 a ton, now holding at \$35 to \$36 and \$31 to \$32 a ton, respectively. All grades of wrought pipe have advanced. Heavy melting steel continues to climb, but by easy stages, and as a result the market today is \$20 to \$20.50, or a gain of 50 cents. Steel car axles continue in heavy demand, although it is understood some material is available at a figure slightly under last week's level.

Market Grows Stronger

Buffalo, Jan. 13.—The scrap market continues to grow in strength. Heavy melting steel now is quoted from \$25.00 to \$26.00, and is not to be had in large tonnage. There is a strong demand for almost every grade in the list. Practically every grade has risen in price. All are scarce. There is a considerable car shortage. A fair volume of scrap trading was done the past week.

Market Has Healthy Tone

Cleveland, Jan. 13.—Scrap iron and steel continues to advance, with demand heavy and much of it unsatisfied. Heavy melting steel is not yet scarce, but melters would take a great deal more than is being offered. Yard interests are holding to their accumulations. A fair tonnage of steel has been bought here at \$24.50, and dealers are now asking \$25 to \$26. Malleable is another grade that is displaying great strength; the railroad grade has advanced \$2 a ton and agricultural \$1. Cast borings are up \$1 a ton and machine shop turnings 50 cents. The market appears the healthiest in weeks.

Chicago Market Strong

Chicago, Jan. 13.—The market for scrap iron and steel in Chicago is strong, with considerable variation between grades. Prices have been advanced steadily and are now on a basis measurably near the highest figures reached during war times. Heavy melting steel and its allied grades are fairly quiet. The demand for cast scrap and other grades used in foundries and roll-

ing mill descriptions is stronger, with supply fairly limited. Railroads appear to be putting out scrap more generally than has been the case recently, but most of the lists carry only moderate tonnages. The Southern offers 2700 tons, the Wabash 1370 tons, the Northern Pacific 1050 tons, the Chicago Great Western 750 tons, the Chicago, Milwaukee & St. Paul 500 tons, the Burlington 350 tons, and the Michigan Central an open list.

Melting Steel Moves Up

Cincinnati, Jan. 14.—There has been an increased demand for most grades of scrap and some prices are stronger. Two big buyers are said to be in this market for large tonnages, but their negotiations have been carefully guarded. Perhaps the outstanding feature of the market just at this time is the strength of heavy melting steel for which there has been an increasing demand and a marking up of price. Some other grades have advanced and the market is extremely firm throughout. Scrap stocks have not been materially reduced, but there has been experienced some difficulty in obtaining cars for shipments.

Prices Advanced at St. Louis

St. Louis, Jan. 10.—Prices of all grades of scrap iron and steel have advanced from \$1 to \$2 per ton during the past week. Demand is large and varied, and available stocks are light, with little new material coming in. Orders have been given by the railroad administration to railroads in this district to dispose of all scrap. This order doubtless is made to increase the cash on hand when the properties are turned back to the stockholders, but thus far have been light. If there is much scrap to sell, the roads have not the labor to handle it nor cars in which to move it. Railroad scrap before the market in the week consisted of 400 tons offered by the St. Louis & San Francisco, 1000 tons offered by the Missouri, Kansas & Texas, and 550 tons by the St. Louis Terminal Railway association. The two first lists were closed, and all material brought top prices. All plants melting scrap have plenty of orders, and as soon as the rolling mills are able to relieve the congestion in their yards, caused by the coal strike, they will begin to take large quantities of scrap. Foundries have work ahead which will keep them operating at capacity for several months.

Southern Market Active

Birmingham, Ala., Jan. 13.—The southern scrap market is gaining in strength, and prices are ascending. Dealers are taking advantage of the opportunity to sell and much activity is noted about the yards. Railroad cars are sufficient to keep material moving.

Tin Plate at \$10

Business Done at That Figure—Supplies Extremely Scarce

Pittsburgh, Jan. 13.—Famine conditions still rule in the tin plate market as far as prompt or early tonnages are concerned. With mill operations hampered by the shortage of sheet bars, little if any headway has been made in reducing the orders backed up by the

steel and coal strikes and those more recently booked. However, there seems to be some supply if buyers want to go high enough. It is reported that some domestic business has been taken by independent makers as high as \$10 per base box. Such business, however, is not possible of acceptance by the rank and file of makers, who are thoroughly committed. The base quotation of \$7, Pittsburgh, generally is being adhered to by most manufacturers, but no tin plate can be obtained for either prompt, first quarter or first half shipment at that figure, which is merely a nominal price. Against export inquiries as high as \$9 and \$9.50 per base box, Pittsburgh, have been quoted. Heavy demands are coming out for terne plate, with few makers in a position to take on any additional tonnage.

In 1919 aggregate capital invested in new companies was 12 billions, or 414 per cent more than in 1918, the Journal of Commerce, New York, estimates.

Ferromanganese at \$140

New York, Jan. 12.—Approximately 500 to 1000 tons of English 76 to 80 per cent ferromanganese have been sold during the past week at \$140, c.i.f. tidewater, for shipment beginning with March and extending over the second and third quarters. Including the business transacted the week before last, more than 1000 tons of English metal now have been sold at the new figure. A price of \$135, tidewater, which was named as a nominal figure by one English maker to its agent here, has not been withdrawn but is practically without significance, owing to the fact that the importer has not been authorized to offer any metal at this price. At least 1000 tons of domestic 76 to 86 per cent metal has been sold for second half at \$140, delivered, and it is probable that the aggregate tonnage sold was considerably larger. There now is an active inquiry before the trade. One domestic interest alone wants 6000 to 9000 tons for the second and third quarters.

Although not much activity has characterized spiegeleisen during the past week, inquiry has improved. One consumer is willing to place a large tonnage at \$45 furnace for 20 per cent metal. Ferroalloy specialties remain rather quiet and show few price changes. Some of the ferrochrome contracts for 1920 delivery which were placed last month went as low as 18 cents a pound to domestic makers, foreign makers sharing to a small extent in this large business. The current market for ferrochrome containing 6 to 8 per cent carbon is about 21 cents a pound contained, for spot carloads. Contracts for moderate quantities for 1920 can be placed at 20 cent.

Manganese Ore Sells Higher

Philadelphia, Jan. 13.—Since the sale of manganese ore last week at 70 cents, tidewater, a tonnage has been sold considerably higher. It now is said standard South American ore could not be had at less than 80 cents. Several good sized inquiries now are in the market for foreign

Sheet Output Held Back

Shortage of Steel Complicates Tight Market Caused by Excessive Demand—Ore Plant Suspends—Premiums Less Effective

Pittsburgh, Jan. 13.—Shortage of sheet bars remains a restrictive factor in the operation of sheet mills. The American Sheet & Tin Plate Co., notwithstanding big drafts on western plants of the Steel corporation has not been getting more than half the normal requirements of its eastern plants. Among the independents, an eastern Ohio company operating 21 mills has suspended because of the lack of steel. Loss of capacity and production by the leading interest has been rather heavy, as it now has less than 90 per cent of its sheet mills in operation, as compared with 96 per cent about 10 days ago. Little headway has been made in the reduction of accumulated business and the spot or prompt supply remains extremely limited, with demands

heavy because of the failure of buyers to obtain much material against old orders. Sales of black sheets recently have been made as high as 5.75c, base, of galvanized at 7.00c, base, and of blue annealed at 4.50c, base, or \$20 to \$28 per ton above regular market prices.

4.30c Philadelphia Minimum

Philadelphia, Jan. 13.—The minimum price on blue annealed sheets in this district is 4.30c, Pittsburgh, for No. 10 blue annealed, but sales are limited to the urgent needs of regular customers.

Premiums Bring Little Tonnage

Youngstown, O., Jan. 13.—One of the most difficult problems sheet consumers are confronted with today is to locate material for first quarter delivery. Every sheetmaker in the Mahoning valley has his books closed and it is thought considerable business now in hand will be carried over into second quarter. If makers were in a position to consider business for second quarter the present unsatisfied demand would be heavy enough to schedule mills well into June.

Heretofore, when a buyer proposed a substantial premium he usually was successful in locating enough tonnage to meet his requirement. The market now, however, is so tight that premiums are of little account. Conditions here are such that sheets are unobtainable at any price. Certain sheetmakers will do well to keep their mills in operation throughout this quarter on account of the scarcity of sheet bars. Galvanized sheets probably will be higher when offered again inasmuch as the price of spelter shows a tendency to advance right along. One large maker of galvanized sheets replenished his stock of spelter recently and paid 9 cents for every pound.

Sheet prices continue nominal throughout this district. Independent sheet makers are following divergent policies in naming prices and this accounts for a considerable spread wherever figures are quoted. A substantial tonnage of No. 11 blue annealed recently was purchased by the Ford Motor Co. at 6.50c base. Representative quotations of sheets if obtainable at mills here would be 4.50c for blue annealed, 5.75c for black and 7.00c for galvanized.

Buyers Get No Tonnage

Chicago, Jan. 13.—It would be difficult to imagine a tighter situation in any line of finished steel than presents itself in the steel sheet market. As a result buyers find it practically impossible to obtain further contracts either with mills situated in the west or from sheetmakers further east. As a result there is considerable scrambling for such odd lots as come on to the market occasionally, and premiums of almost unbelievable proportions are offered by those who need material most. The leading independent at Chicago continues sold up for first half.

ore but it is not yet certain whether all resale manganese ore has been cleaned off the market.

Cambria Wants Large Tonnage

Philadelphia, Jan. 13.—The Cambria Steel Co. has an inquiry out for from 6000 to 9000 tons of ferromanganese for second and third quarter delivery. Additional sales of domestic metal for the second half have been made at \$140, delivered. The Lavino Furnace Co. will blow in its Lebanon furnace in two weeks on pig iron. It is to go on ferromanganese as soon as possible. One of the Dunbar furnaces which has been rebuilt will go in immediately on pig iron to alternate with spiegeleisen. The other Dunbar stack will continue making ferromanganese.

Ferromanganese Still Climbing

Pittsburgh, Jan. 13.—Prices of ferromanganese still are on the upgrade under a good demand and a lack of offerings, especially for early delivery. All domestic makers are sold out for the first half of this year, while English offerings are small, due to a scarcity of ore. This scarcity is the result of the unsettled political situation in southern Russia and the lack of shipping space from India, and also in part to a protest from English steel manufacturers against exportation of ferromanganese. While \$150, delivered, has not yet been done on any considerable amount of material here, it is extremely doubtful if less than that price now would be accepted on shipments to be made over the first half for either domestic or imported material. Price ideas of domestic producers are influenced not only by their sold-up condition and the tight foreign situation, but also by the fact that the Brazilian government has imposed a stiff export duty on manganese ore.

Spiegeleisen is moving up with ferromanganese, being quoted as high as \$55, furnace, for prompt or early delivery, while sales aggregating about 500 tons are noted at from \$45 to \$53, mostly at \$50 or above.

Bar Buyers In Despair

Find it Extremely Difficult to Get Assured Tonnage at Any Price

— Mills are Swamped With Orders

Chicago, Jan. 13.—A steel bar maker today facetiously expressed his opinion that "nobody ever will be able to buy soft steel bars any more." This simply represented his opinion of the market as glutted with actual orders and backed-up inquiry. It expresses fairly well the general situation and spells the despair of steel bar consumers who need more material for first half. Quotations mean little in such situations, but soft steel bar makers in Chicago have not departed from the quotation of 2.62c, mill, which has prevailed for nearly a year.

Manufacturers of bar iron have advanced quotations \$5 per ton from 3.00c to 3.25c, mill, these figures applying to first quarter delivery and they are not yet ready to sell into the second quarter. This advance has been brought about largely by increased prices on scrap. Refusal to sell for second quarter is largely because of the uncertainty as to what height scrap quotations may reach. Large inquiry is being entertained and mills are able to take as much as they feel safe in covering.

Mills producing hard steel bars from old rails have more inquiry than they can accommodate and continue to sell without a definite price, buyers to pay whatever is ruling at the time of delivery.

Output Increases Slowly

New York, Jan. 12.—While output of steel bars is increasing, the improvement is slow. A number of the mills most seriously affected by the steel strike continue to produce at considerably less than 50 per cent of capacity. Several of them say that they will consider themselves lucky if they get back to the basis that prevailed before the steel strike by March. In the meantime all of the steel bar makers continue out of the market, excepting for such tonnage as they are forced to accept to take care of consumers depending on them. The prices which are being done vary considerably. The leading interest continues to take all of its business on the basis of 2.35c, Pittsburgh, and at least some independents have not exceeded 2.50c, Pittsburgh. Others have obtained higher. In some cases they have done 3.00c and 3.25c, while some mills are supplying their customers under contracts at 3.50c, Pittsburgh.

Sellers of bar iron in the East are making no great effort to contract far into the future, owing to the scarcity of scrap and its rapid advance. At the same time there is no particularly large demand, with the result that trading is of only fair proportions. Prices, f.o.b. New York, are holding at 3.77c for carload lots, and 4.02c for less than carload lots. Only where the tonnage is especially desirable could the price of 3.77c be shaded, it is believed.

Further Advance Prices

Philadelphia, Jan. 13.—Some companies continue to quote moderate prices on such steel bars as it is

necessary for them to book from regular customers, but others continue to increase premiums. One eastern maker has sold at 4.00c, Pittsburgh, and now is quoting 4.25c on commercial bars and 4.50c on forging quality. Some reinforcing bars have been sold at 3.50c, Pittsburgh.

Big Premiums on Early Shipment

Pittsburgh, Jan. 13.—Merchant steel bars for early delivery are so urgently wanted that makers in a position to take such business have no trouble in obtaining big premiums. Buyers rather than makers are establishing the prompt market. Business in mild steel bars is reported as high as 3.25c, base Pittsburgh, and recent sales at less than 2.60c, at which one of the independent companies took on a limited amount from regular customers, are rare. Chain makers have paid as high as 3.75c, Pittsburgh, for some fairly large tonnages of forging bars. Makers of bars have only small tonnages available for early shipment and are not inclined to take on long-time contracts. They could enter business for the first half at current prices, but in the event of an easier supply and price situation later with a more normal production, buyers probably could not specify against orders placed at present prices.

Iron bars are firmly held at the recent advance, with leading makers sold as far ahead as they care to be and not much inclined to consider any demand except from their regular customers. Chainmakers are fairly heavy buyers and railroad inquiries are more numerous.

Pay Almost Any Price

Cleveland, Jan. 13.—Consumers of steel bars are finding it extremely difficult to buy from the mills at any figure which assures definite delivery. Prices range from the Steel corporation figure of 2.35c, Pittsburgh, to 3.25c. Many consumers apparently would pay almost any figure if they could get the tonnage. Reinforcing bars are being quoted around 3.50c, mill. Bids will be taken Jan. 26 on another section of the sewage disposal plant, this city, requiring 500 tons. An addition to the plant of the Cleveland Illuminating Co. at Seventy-second street, involves a tonnage of bars and this has been placed.

Prompt Tonnages Come High

Pittsburgh, Jan. 13.—Sales of cold finished steel bars for early delivery recently have been made here as high as 4.305c, base, Pittsburgh, and in view of the fact that merchant bessemer bars such as are used in making screw stock recently have sold as high as 3.25c, base, talk is heard of a possible price of 4.50c for cold finished bars. So long as merchant bars are moving to makers of cold-finished bars at 2.35c there will be

basis for a 3.60c base on the latter, the usual spread between the hot-rolled and cold-finished bars being \$1.25 per 100 pounds. But makers of the latter are not getting full shipments against old contracts at 2.35c, base, and spot purchases are not less than 3.00c. One independent bar maker took on a little business at 2.60c, which would mean 3.85c for cold finished bars. The strength of the merchant bar market makes probable an early revision of the base on cold-rolled, drawn and turned bars.

Makers Lack Raw Material

Pittsburgh, Jan. 13.—Makers of nuts and bolts find no lack of opportunity to do business but on account of the continued shortage of steel are taking on practically no new orders. Every maker in this district is sold to capacity for the next few months. Machine and carriage bolts hold at the recent discount but track bolts have moved up to a base of 5.50c, Pittsburgh, for carload lots. Rivet demands are increasing.

Production Still Taxed

Pittsburgh, Jan. 13.—Demand for hoops and bands still taxes the production, which because steel output still is limited by the fuel and gas situation, is not gaining rapidly. The result is that buyers are getting only a portion of the tonnages due them on contracts and are seeking open market supplies. The old base of 3.05c, Pittsburgh, for hoops and bands still is being quoted by some makers, but carries no definite delivery. Others are selling tonnages as they become available.

Oil Pipe

Being Advanced By Two Independents—Detroit Wants Cast Tonnage

Pittsburgh, Jan. 13.—At least two of the independent makers of steel pipe have under consideration a new card on oil country drill and drive pipe and casing, which would advance prices on these lines about \$10 per ton over the March 21 bases. The cards have not yet been issued, but there is not much doubt that they will be. Such an advance would approximate that made last July by the Wheeling Steel & Iron Co., which advanced all lapweld pipe 5 points, or \$10 per ton. As basis for the advance, it is explained that costs have increased and that buyers are offering double the present prices for early bookings. The companies considering the advance also state they are taking only domestic business, although they have plenty of offers of export orders carrying premiums of from \$15 to \$50 per ton over the domestic prices of March 21. It is asserted that export business recently has been taken in 10-inch casing at more than \$37 per ton above the domestic base on this size. Few makers can take on new business for early delivery except at the expense of old orders, all having sufficient bookings to tax capacity through the first half, while the leading interest is sold through to practically the end of the year. December made a poor showing in the matter of tonnage because of the coal situation, but all companies are doing better this

month. Heavy demands for boiler tubes are coming from the south from boiler makers having export orders from Cuba and South America.

Small Tonnage Pending in East

New York, Jan. 12.—Bids will be closed Jan. 22 on 1500 tons of cast iron pipe for New Bedford, Mass. Virtually all will be 36-inch pipe. New York city will likely take action this week in the award of about 2000 tons of 36-inch pipe, it being understood that arrangements have been finally made for financing the project. The Beaver Engineering Co. is low bidder on the general contract. Private demand continues strong, and shops are turning away considerable tonnage, the deliveries desired being impossible to meet because of the labor shortage. Few shops are operated at more than 60 per cent capacity.

Detroit Increases Inquiry

Chicago, Jan. 13.—After rejecting all bids recently taken on 9200 tons of cast iron pipe, the city of Detroit has re-advertised for bids to be opened Jan. 16 on 11,000 tons. Elyria, O., did not take cast iron pipe on its recent inquiry for 5000 to 7000 tons, but purchased the equivalent of steel pipe. On the recent inquiry for 300 tons the same city has not yet placed the business but the United States Cast Iron Pipe & Foundry Co. is low bidder. Inquiry is slack as is expected at this time, but shops have plenty of business.

Semifinished Is Scarcer

Pittsburgh, Jan. 13.—Supplies of all forms of semifinished steel are still scarce, while the scarcity of sheet bars is so acute that many sheet or tin plate manufacturers are not able to operate their mills anywhere near capacity. One sheet manufacturer operating 21 mills has suspended for want of steel. While a valley maker of bars is quoting and accepting some business at \$50, the more general price on prompt or early tonnages is \$55, and some business recently has been done at \$59, delivered, at a plant carrying a freight of \$1 per ton from point of origin. Eastern plants of the American Sheet & Tin Plate Co. lately have not been getting more than one-half their normal requirements. The Carnegie Steel Co. has not been able to get out anywhere near a full tonnage of sheet bars at its Pittsburgh and valley plants, and drafts on the western plants of the United States Steel Corp. by the American Sheet & Tin Plate Co. have been delayed in transit. While demand for billets for early shipment is heavy, supplies are more nearly equal to requirements than is the case with sheet bars. A sale of 500 tons of billets on a basis of \$50 for 4 x 4-inch size is noted. Wire rods show a stronger price tendency, the result of smaller offerings, due to the fact that makers have more finishing capacity in operation and have few rods for sale. Independent steel companies still are getting \$60 to \$65 for the base size of soft rods, although the March 21 base, \$52, Pittsburgh.

Consumers Bid High Prices

New York, Jan. 12.—Consumers who are anxious to obtain forging billets

Plate Mills are Swamped

Orders for 70,000 Tons Placed by Shipbuilding Companies While Similar Tonnage is Refused—Car Tonnage Ordered at Chicago—Quote 4.50c

Philadelphia, Jan. 13.—Demand for plates continues to swamp the mills. Orders for from 65,000 to 70,000 tons of ship plates have come from the Sun Shipbuilding Co., Pusey & Jones Co., the Bethlehem Shipbuilding Corp. and the Merchant Shipbuilding Corp. Most of the current demand is for tankers and tank cars for the oil industry. A similar tonnage is being turned down. In some cases, eastern mills continue quoting 3.25c, Pittsburgh, on sheared plates, and 3.00c on universals. When there is much tonnage sheared plates are entered at 3.50c. At least two of the smaller eastern mills which pay high prices for their semifinished material have quoted as high as 4.50c, Pittsburgh. The Lukens Steel Co. hopes to start its 204-inch plate mill, this week. It has not been able to run this mill for some time because of the coal shortage. Deliveries on sheared plates now cannot be had before March or April or later, but universal and flanging work can be handled promptly.

Foreign Demand is Large

New York, Jan. 12.—Now that the usual inventory period has come to

an end in Japan, big inquiries for plate tonnages are coming out from that source. The platemakers say that if they took all the Japanese business that was offered to them it would occupy their books to the exclusion of all other business for months to come. In addition to the Japanese demands there are export inquiries from other foreign sources. As a matter of fact the greater portion of the plate inquiry in this district is from abroad. Good-sized domestic inquiries are coming up in this district right along but the total does not compare with that for export. Among domestic plate makers recently turned away is one lot of 20,000 tons of ship steel. The leading interest continues to take care of its customers to the best of its ability at 2.65c, Pittsburgh. In some cases large independents, although out of the market, in order to keep their regular customers supplied, have taken some business at 2.65c and 2.75c, Pittsburgh. Others have been quoting 3.00c to 3.25c. With eastern mills the present range on sheared plates is 3.25c to 3.50c, Pittsburgh, while universal plates can be had from eastern makers at 3.00c, Pittsburgh.

Early Tonnages Still Short

Pittsburgh, Jan. 13.—Early tonnages of plates are almost as hard to obtain as some of the other lines of finished steel. Not only is there an urgent demand for prompt and early shipment, but the desire of tank builders and fabricating interests to be protected against their future requirements has led to more or less business either at a big premium over the regular price of 2.65c, base, Pittsburgh, or at the price at time of delivery at makers' convenience. As high as 3.25c, Pittsburgh, has been done on tank plates for shipment at the convenience of the maker, and 3.50c has been offered by some tank builders anxious to get a place on the order books of the mills. A little business has been taken for early delivery by one independent on a basis of 2.90c, Pittsburgh. This company, as well as some others, is said to have announced an allotment tracts.

Cars Take Much Plates

Chicago, Jan. 13.—Demand for steel plates continues strong and mills are approaching the saturation point. Most demand at present is from builders of oil tanks and tank cars and also from carbuilders who need much material for unusually large car repair programs. One lot of 48,000 tons of steel for car repairs was placed recently and much of this will be plates, the distribution depending on the types of cars to be rebuilt. Another requirement about to be placed involves 30,000 tons of steel for car building of which a large part will be plates. In addition to these large items, general buying continues heavy from all sources. The quotation here is strong at 2.92c, Chicago mill.

for immediate use have offered to pay the mills 4.00c, Pittsburgh, per pound or \$80 per net ton for spot shipment in carloads, but, as far as known, without inducing a sale. However, orders for forging billets have been booked in this district during the past week at \$70 Pittsburgh, per gross ton, equivalent to \$74.50, New York.

Several Thousand Tons Placed

Philadelphia, Jan. 13.—Several thousand tons of semifinished steel were sold in this district during the past week, mainly at \$55, Pittsburgh, for rerolling billets, \$57.50 for slabs and \$65 for forging billets.

Heavy Demand Unsatisfied

Youngstown, O., Jan. 13.—Semifinished steel is becoming scarcer in this district. The demand for billets, slabs and sheet bars continues heavy. Substantial prices for first quarter shipments are being offered but they fail to uncover any tonnages. Consumers here are purchasing from mills outside the district and have been paying in the neighborhood of \$48 for 4 x 4-inch billets. An inquiry sent out recently for between 2000 and 3000 tons of open-hearth slabs brought several quotations, the highest of which was \$60, mill. This requirement, however, is expected to be satisfied around \$52. Sheet bars are in good demand and are exceedingly scarce. One buyer has been combing this and nearby districts for this material but his offer of \$58 mill, has brought no results.

Shape Market Is Higher

Pittsburgh Producer Sells at 2.70c on Limited Tonnage—Awards in Good Volume—10,000 Tons Closed in East

Pittsburgh, Jan. 13.—Illustrative of the tight situation as regards early shipments of shapes, it can be stated that an independent company recently opened its books for a limited tonnage for early delivery at 2.70c, base, Pittsburgh, and found no trouble in promptly disposing of the allotment. Mills without exception have several weeks' business in sight and some have made sales of structural beams on a 2.75c, base. It is no secret that some fabricating interests in making estimates recently have figured from bases of 2.65c to 2.75c for the plain material. Few structural lettings have come out here recently but inquiry still is active and it is noted that lettings in the final week of the year on returns to the Bridge Builders and Structural society, that lettings were approximately 18,000 tons, or about 4000 tons above the theoretical capacity of the society members. Inquiries for that week were slightly under 40,000; the ratio of lettings to inquiries, therefore, was close to 50 per cent, a considerable gain over the best previous weeks of 1919. Local fabricating shops are booked to capacity well into the second quarter.

Good Volume in East

New York, Jan. 12.—Structural steel contracts awarded in New York and vicinity during the past week call for approximately 10,000 tons. Several large jobs were placed, while a good volume of small tonnages also figured in the week's business. Eastern independent mills generally continue to quote 2.55c, Pittsburgh, on shapes for delivery in the East.

Refuse Most of New Orders

Philadelphia, Jan. 13.—Shapes are now extremely difficult to obtain. Companies which have been taking on decreasing amounts of new orders, due to sold up conditions, are so choked with orders that they are turning away everything except what is needed to keep customers going. In some cases they are even turning down these orders. In general, the minimum price quoted by eastern mills continues to be 2.55c, Pittsburgh, although 2.60c, Pittsburgh, and also 2.85c and 2.90c, mill, are being done.

New Inquiries Appear

Cleveland, Jan. 13.—Additional inquiries for approximately 10,000 tons of structural shapes came on the market during the past week but the business was not placed owing to the congested condition of the mills. The largest lot is a building for the Union Banking & Savings Co. requiring 2400 to 4000 tons depending upon the size finally decided on. Indications are that little will be attempted in the line of new construction until spring.

Most Building Small Units

Chicago, Jan. 13.—A fairly steady number of building projects continues to

come out from week to week in the west, but for the most part each project calls for only a small tonnage. Inquiry is somewhat slower, which is regarded as entirely seasonal. Inquiry for plain material on the part of fabricators is strong, and mills are becoming well filled on this product. The quotation remains firm at 2.72c, Chicago.

CONTRACTS AWARDED

North Avenue viaduct at Milwaukee, 200 tons to Milwaukee Bridge Co. Klug & Smith, Mack block, Milwaukee, general contractors.
Chain Belt Co., Milwaukee, second unit of new works, 250 tons to Milwaukee Structural Steel Co.
Building for Shredded Wheat Co., 350 tons of reinforcing bars to Concrete Steel Co. of Buffalo.
Building for Buffalo Steel Car Co., Cheektowaga, N. Y., 400 tons to Jones & Laughlin Steel Co.
Buildings for American Car & Foundry Co., Buffalo, 900 tons to Buffalo Structural Steel Co.
Building for Lockport Paper Company, Lockport, N. Y., 200 tons to Kellogg Structural Steel Co.
New plant for Samson Tractor Works, Janesville, Wis., 1000 tons to the McClintic-Marshall Co.
Plant addition for the Pittsburgh Plate Glass Co., Ford City, Pa., 700 tons, to the Jones & Laughlin Steel Co.
Extensions to building No. 9, B. F. Goodrich Co., Akron, O., 700 tons to the Jones & Laughlin Steel Co.
Foundry plant at Muskegon Heights, Mich., for Manning, Maxwell & Moore, Inc., 875 tons, to McClintic-Marshall Construction Co.
Balaban & Katz theater building, Chicago, 700 tons to Federal Bridge Co.
Structural steel at Hastings, Mich., for E. W. Bliss Co., 171 tons to Milwaukee Bridge Co.
Plant at Aurora, Ill., for Richards, Wilcox Mfg. Co., 169 tons to Lakeside Bridge Co.
Building for Textile Building Co., Inc., New York City, 6000 tons, reported last week, placed with Hay Foundry & Iron Works.
Building for Bankers' Trust Co., Madison and Fifty-seventh street, New York, 1500 tons, to Levering & Gerrigues.
Addition to the Bulletin building, Philadelphia, 1500 tons, to American Bridge Co.
Building for Passaic Worsted Spinning Mills, Passaic, N. J., 600 tons, to American Bridge Co.
Gotham bank, New York, tonnage increased from 500 to 2200, to Hinkle Iron Works.
Apartment house at Madison and Fifty-fourth street, New York, 500 tons, to Hinkle Iron Works.
Laboratory for New York university, 300 tons, to Hinkle Iron Works.
Office building, Beaver street, New York, 200 tons, to Hinkle Iron Works.
Addition to Bowling Green building, New York, 400 tons, to American Bridge Co.
Factory building, Jersey City, N. J., 200 tons, placed with independent through Ballinger & Perrot.
Addition to plant of Magnolia Petroleum Co., Dallas, Tex., 4000 tons, to Virginia Bridge & Iron Co.
Skip bridge for Thomas Iron Co., Hokendauqua, Pa., 100 tons; awarded to Eastern Steel Co.
Skip bridge for Empire Steel & Iron Co., 100 tons, awarded to Eastern Steel Co.
Addition to plant of William Crane Co., Jersey City, N. J., 150 tons; award to independent.

CONTRACTS PENDING

Orpheum theater building, Cleveland, 350 tons, bids asked.
High school, Bay City, Mich., 350 tons, bids asked.
Foundry building for Lakey Foundry & Machine Co., Muskegon, Mich., 400 tons, bids asked.
Auto sales building, Boston, 1000 tons; contract pending.
Building for the United Banking & Savings Co., Cleveland, 2400 tons if eight stories is erected and 4000 tons if 17 stories adopted; bids being taken.
Building for the National Lamp Co., St. Louis, 400 tons, bids being taken.
Section of sewage disposal plant, Cleveland, 500 tons of re-enforcing bars; bids to be taken Jan. 26.
Extensions to soaking pit floor, Worth Steel Co., Claymont, Del., 250 tons; contract pending.

Wire Output Better

Pittsburgh, Jan. 13.—Official termination of the steel plant strike has resulted in the return of a number of men to work and this is reflected in increased operation of the wire

mills in this district. All companies this week have more finishing capacity in operation than since early last September. But the famine of nails continues and early tonnages of other wire products are anything but large. All makers have heavy obligations and cannot do much with new demands. On nails, some buyers are willing to accept deferred shipments against old contracts placed at \$3.25 and \$3.50 base, Pittsburgh, and place new orders for early delivery at \$4.25, the general quotation of most of the independent companies. The tendency of the independent companies is to fight shy of contracts and only a portion of such demands are being entered upon the books. It is expected that a new nail card, recently agitated, will be adopted soon and this will bring about a more stable market not only in nails but all wire products. It is understood that the card under consideration follows the method employed in export quotations, with nails priced on the gage and length and the extras based strictly on costs.

Sales Make Small Tonnage

Chicago, Jan. 13.—Official declaration that the steel strike is ended has had little actual effect on wire mills in this territory, as it appears that most strikers had obtained work elsewhere and were not on the ground to resume their old positions. However, the announcement has had the effect of causing buyers and contract holders to deluge sales offices with requests for more tonnage and for immediate delivery of their material.

Heavy Tonnage

Being Taken By Railroads in Various Products—Car Steel Placed

Chicago, Jan. 13.—Not much further buying of standard steel rails is being done as most roads are covered as far as they desire to go at present. Activity has been shifted to track fastenings, one recent order including 15,000 tons of tie plates and another order involving 12,500 kegs of spikes. While these are the largest in their classes, many other orders are almost equal and the total tonnage in miscellaneous track supplies to accompany rail buying is large.

Railroads Place Orders

Pittsburgh, Jan. 13.—Railroads ordinarily served with rails by Pittsburgh district mills are understood to have converted reservations made some weeks ago into actual contracts but the tonnages involved and the purchases by the various lines are not made public. Practically all of the business has gone to the Carnegie Steel Co., which still is quoting standard rails at \$45, mill, for bessemer, and \$47 for open hearth. The Mid-Light sections are in good demand with some business being taken as high as 2.75c base. Heavy orders for standard spikes recently have been placed with makers here, and bookings called for 25,000 kegs in the past week. These orders came from the Pennsylvania railroad, the Baltimore & Ohio, the Norfolk & Western railroad, and the Seaboard Air Line. Various makers have advanced standard spikes from 3.35c to 3.60c, Pittsburgh.

Exporting Difficulties Increased

Foreign Customers Holding off on Account of Exorbitant Premiums and Restricted Production—Renewed Interest Shown in Rail Inquiries From Abroad
—Belgium Ready to Sell Structural Steel

NEW YORK, Jan. 12.—Export inquiries have fallen off materially since the first of the year. This is due, it is felt, not alone to the usual holiday effects but because foreign customers have at last been convinced that it is almost useless to send their inquiries into this market. So long as the mills are filled with orders and production lags, while even exorbitant premiums fail to bring out the goods desired, exporters are convinced that it is a needless expense to bother with specifications and quotations.

This does not mean, however, that no business whatever is being done. Nearly every export house is today booking orders, but the tonnages are small and the commodities limited. Each exporter is carefully guarding all facts regarding his source of supply, his foreign customers and the sales made.

For the present exporters are finding it practically impossible to purchase light sheets, because the American automobile makers have filled up the mills with orders. Were there any source of supply, great quantities of light sheets could be sold in foreign markets. It is estimated that Japan would take probably 50,000 tons of light sheets immediately were the supply available. China would take probably half this amount and other countries would come into the market. Despite the impossibility to purchase this commodity inquiries for it are still coming in. In addition to having the sources of supply of light sheets cut off, exporters say that they are also unable to procure light shapes, light plates, and small sizes of bars. Light rails are also extremely scarce, although some heavy rails can be booked for late deliveries.

One of the important developments of the past week was the appearance of Belgian agents in the eastern markets soliciting orders for structural material. So far as could be learned New York builders have not as yet signed up contracts to buy any of the Belgian structural steel, but that they may so do shortly is not improbable.

New Credit Schemes

The Far East is practically the only customer of importance now being served by the American export houses. The needs of Europe are enormous but the exchange prevents any general trading and such sales as are made have to be made under special credit arrangements. Some interesting experiments in individual credits in Europe are now being initiated by some export houses, but the practice is by no means general. The railway equipment manufacturers have shown considerable progressiveness in this direction, and as a consequence some important sales of cars and locomotives to Belgium and other coun-

tries have been arranged. But even the limit of their abilities is said to have been practically reached, as, according to report, European mills will probably obtain the next orders. In the line of general iron and steel products no headway has been made to effect sales on special credit arrangements. The United States Steel Products Co., and the Consolidated Steel Corp. remain out of the market.

Japan is expected back in the market to a limited extent by the end of the current month, but it is not believed that even the Japanese inquiries will be in anything like the volume they were during the last months of 1919. Foreigners will probably not approach the market with any sincere intent of beginning normal trading until they know that the American mills are in a position to take the business. Exporters have been advising their foreign agencies that the domestic situation may begin to clear sufficiently within the next two or three months to warrant the submission of inquiries more liberally.

Products that are still selling abroad include chiefly wire, bars, heavy sheets, plates and pipe. These are going to most of the Oriental countries. The South American market is inordinately quiet. This results not only from the lack of adequate mail and cable service but also from the fact that the South American is determined not to place orders here while the prices are rising.

Sales consummated since the first of the year call for deliveries during the second quarter. Little business has been placed for delivery during the first quarter. For instance, it was learned that 4000 cases of tin plate were purchased for China on the basis of first quarter delivery. An exporter sold the Philippine islands 1200 tons of bars and 10,000 reels of barbed wire, obtaining the promise from the mills that delivery would be made during the first quarter. Heavy premiums were paid, it is understood.

Generally, however, the orders booked since the first of 1920 have called for second quarter delivery. One house reported that it has sold a number of small shipments of miscellaneous products to Japan and that second quarter delivery was the rule in each instance. Another house said that an order from the Philippine islands had been booked for 15,000 kegs of nails, a second quarter delivery being promised. While it might be possible at this time to book export orders for third quarter delivery, the American mills show a decided disinclination to accept any such business.

There is no specific tendency in exports, however. It was learned that an inquiry for 20,000 tons of heavy rails from China based on a third quarter delivery had been entertained. While the closing of the deal is de-

pendent merely on the ratification by the buyer, it is understood the mill proposed to sell at a price \$5 a ton higher than the scheduled prices of March last. It is felt that this is so favorable an offer that the foreign customer will accept. There are a large number of inquiries in the market for light rails, but this product is scarce. Scandinavia has inquired for 13,000 tons, Holland for 3600 tons, and the Far East for 1000 tons.

One important house declared that its sales to Japan of all iron and steel lines would probably not total over 600 tons within the last week or two. Sales reported include eight carloads of pipe to Japan, 500 tons of bars to the Philippine islands and an assortment of pipe, sheets, bars and plates to the Dutch East Indies.

The price movement today is decidedly contrary to the interests of the export trade. The immediate result will be to send a great volume of inquiries to England and Europe that would otherwise have gravitated to the United States. The export market keeps itself buoyed up on the prospects which are foreseen. For instance, it is now reported that a railroad between Salta, Argentina, and Antofagasta, Chile, is under contemplation and it is anticipated that North American capitalists will build and operate it. The estimated cost is \$25,000,000 gold.

Railway Work Ahead

Belgian car builders have been considerably agitated over the business placed abroad for rail equipment in that country. The Belgian builders received orders from their government for but 5000 cars, and now they have offered to sell their government 15,000 cars which they propose to deliver as rapidly as any foreign builder. Belgium needs probably 50,000 cars to restore her transportation systems, and the urgency to relieve the acute traffic problem forced that country to place some orders in America.

From Brazil comes the report that equipment such as circular saws, hand saws, filing machines and emery stones are needed, especially at Porto Alegre. The agency sending in the report stipulated that prices should be quoted c.i.f. The Chilean congress is to appropriate 15,000,000 pesos for the purchase of railroad material, a part of which is to be used in the improvement of the Chilean side of the Transandien railway, where supplies will be needed in a few months. The advertisement for bids on railway supplies last year resulted in some important sales to Chile.

The reduction of hours of labor in Japan is expected to revolutionize Japanese industry. Large orders for modern machinery, especially textile machinery, have already been given American and British manufacturers.

Prices in Britain Still Mounting

General Upward Revision of Steel Prices Likely to Follow Action of Middlesborough Makers
—Market Is in a Feverish Condition—Semifinished Material Scarce,
With Enormous Demand For Finished Steel

The Iron Trade Review Staff Cable

European Headquarters,
THE IRON TRADE REVIEW,
16 Regent St., S. W. 1.

LONDON, Jan. 13.—Iron and steel prices are keeping up their advance and with Europe up-bidding the market, the situation has become feverish. The international iron and steel trade apparently may be restored to a healthy tone only by an increased production throughout the world.

Middlesborough steelmakers have agreed upon a general advance of 25 shillings (\$4.68) per ton as a result of the increased railroad freights and the rising cost of raw material. Other producers are following suit and it is likely that there will be a general upward revision of steel prices before the end of the week. In the meantime pig iron advances already recorded range from 5 to 20 shillings (\$0.94 to \$3.74) per ton. Export prices on pig iron hereafter will be subject to negotiation. The straight differential of 5 shilling (\$0.94) over the present domestic price now is ineffective except to the allies. Neutral countries are being quoted whatever they are willing or able to pay. Scandinavian countries already are offering £10 (\$37.40) for Middlesborough No. 3.

British exports of pig iron in 1919 amounted to 350,000 tons and of fer-

romanganese to 98,000 tons. Total British exports of all iron and steel in 1919 were 2,254,000 tons compared

with 1,600,000 tons in 1918. With tin plate costs higher, sheet bars scarce and the mills filled to June 1, the workmen are asking a 50 per cent increase in wages.

Semifinished material is very scarce despite the fact that British imports of this character in 1919 were 75,000 tons compared with 21,000 tons in 1918. There is an enormous demand for finished steel especially for the Far East and also from the neutral countries. Holland has paid £30 (\$112.20) for Scotch ship plates. Some sales of ferromanganese have been made to Europe at £30 (\$112.20) at the works.

The molders' strike continues as a strong force unsettling industry. The result of the balloting among the men to date is nearly double against the acceptance of the terms recommended recently by the union officials. The men apparently are determined to flout their leadership. There is great surprise over the result. Strong majorities favoring the end of the strike in such important centers as Sheffield and Derby lead to the belief that disintegration of the strike is likely. The employers still are determined in their position but they may be forced to modify their stand. Dock workers are refusing to handle imported castings.

Sterling—\$3.74

Current British Prices

Domestic and Export
Gross Tons at Works

SEMIFINISHED STEEL

	£ s d
Billets, soft steel.....	17.0.0 to 17.10.0
Sheet bars	17.10.0

FINISHED STEEL

Steel bars, England, % to 3 inch	21.15.0
Ship plates, England.....	21.10.0
Ship plates, Scotland.....	21.0.0
Beams, England	18.5.0
Beams, Scotland	18.5.0
Sheets, black, 24 gage.....	29.0.0
Sheets galvanized, 24 gage.....	45.0.0
Rails, 60 lbs. and over.....	17.10.0
Tinplate, base box, 108 lbs..	2.15.0

PIG IRON*

Hematite, East Coast Mixed Numbers	11.0.0
Hematite, Scotch	10.10.0
Middlesborough Basic	9.0.0
Middlesborough No. 3.....	8.15.0
No. 3 Foundry, Derby, Leicester, Nottingham	9.10.0
No. 3 Foundry, Northamptonshire	8.17.6
No. 3 Foundry, Staffordshire..	9.2.6
Scotch Foundry	9.15.0
Ferromanganese, 80 per cent..	28.10.0

*Export prices on pig iron are 5 shillings higher than for domestic.

COKE

Midlands furnace	2.15.6
Midlands foundry	3.11.6

French Output Dwindles; Prices Up

European Staff Correspondence

Value of Franc—\$0.96

PARIS, Dec. 24.—Shortage of coal continues to restrict sharply iron and steel operations in France and to have a corresponding effect upon the market in these materials. Various metalworking plants are closed because of a lack of raw or semifinished material, resulting from the coal stringency. Transportation throughout France still is being severely dislocated because of the fuel factor.

American finished or semifinished material which is coming into France in small quantities is not helping the situation greatly. This is because every

dollar's worth of these products is costing, figured on the current rate of exchange, 10 to 11 or more francs, whereas at the time of the armistice the rate was but 5.70 francs. This very unfavorable picture of the French iron and steel industry applies in spite of the country's great resources of Lorraine ore and Saar coal. Within a month one shipment of 500 tons of Lorraine pig iron was made to England and smaller lots to Scotland.

The stocks of American iron and steel products left by the American expeditionary force upon its departure from France largely are lying on the docks where they were landed, owing to the lack of rail transport which can put them where they are needed. On the Bordeaux quays tonnages of bridge girders, strip and bar steel, etc., have been piled for some months.

It is too soon to foretell what the new year will bring forth except to hope that the promised amelioration of rail and canal transportation will

be forthcoming, which the country has been assured, as the result of the recent visits of Monsieur Clemenceau and Monsieur Tardieu to the liberated regions. It is not the liberated regions alone which are clamoring for deliveries, however, but all France. The Lorraine plants are shutting down here and there for the want of coke and ore. The former is not being brought in from Belgium at this time and the ore largely has been piled up at the mine awaiting shipment. Coke has passed the 100

franc (\$9.60) per ton mark in Lorraine and the Comptoir de Longwy, the combination of blast furnaces supplying ordinary foundry and hematite iron, has advanced its No. 3 grade (2 per cent silicon) to 340 francs (\$32.64) per ton. Pig iron all along the line has risen 20 francs (\$1.92) per ton and scrap 10 francs (\$0.96) additional. Malleable pig iron for automobile castings has advanced to 300 francs (\$28.80) per ton. No finished merchant steel is available at less than 95 francs (\$9.12) per 100

kilos (220 pounds) and sheets start from the base of 105 francs (\$10.08) per 100 kilos. Some French iron ore is being shipped to Belgium at 22 francs (\$2.11) per ton.

The coal situation in north France is still in a sorry plight. But for the arrivals of coal from Germany, by water via Rotterdam and the French channel ports, the Paris region for neither its multifarious metal industries, nor for domestic use, would have enough fuel to keep up operations for a week.

Belgian Prices Rise Under Big Demand

European Staff Correspondence

BRUSSELS, Dec. 24.—Something like a year-end stagnation prevails throughout industrial Belgium, which, like France, is suffering from transport difficulties, though not so severely. The solution appears to be assured by the temporary cessation of passenger trains where possible, thus allowing manufacturing activities to recover ground. Primarily there is a lack of receipts of iron ore from France, and Belgium now is sending its own cars and locomotives after this material which should help to relieve the situation.

American blooms and billets have come into the country in some notable quantities recently. The working up of this steel into finished forms, however, does not fit in with Belgian policy before the war, which was to handle the raw material from the ground up until it left the country in either finished or semifinished form.

Another notable American infiltration into Belgium is the continued receipt of American machine tools. A shipment aggregating \$1,500,000 in value recently was received by the Miferva Automobile Works at Antwerp which is one of the first plants in Europe to take and develop the Knight engine.

The American Car & Foundry Co. has a big project for manufacturing

Value of Franc—\$.098

rolling stock for the Belgian state railways either by assembling the parts on Belgian soil or by partially manufacturing them in this country. Belgium, more than any other country of Europe, has grasped the opportunity for American aid in a whole-spirited manner. In spite of Belgium's heavy financial obligations, foreign exchange during the past several weeks has favored the Belgian franc by 8 to 12 per cent in excess of that of the French franc. This means that Belgium can buy abroad at least 8 per cent better than can France.

Pig Iron Price Raised

A certain Belgian blast furnace interest announces orders for pig iron for January delivery at 360 francs (\$35.28) per ton but intimates that if coke prices rise this price will be increased another 10 to 15 francs (\$0.98 to \$1.47) for orders which may be placed after Jan. 1. Coke is still quoted at 85 francs (\$8.33) per ton in Belgium as compared with 105 francs (\$10.08) in Lorraine.

Steel demands are far in excess of possible home production although merchant steel for export is quoted at 72 francs 50 centimes (\$7.54) per 100 kilos (220 lbs.). Controlled

prices of beams are at 72 francs 50 centimes (\$7.54) per 100 kilos for interior deliveries and 65 francs (\$6.37) for export. Actually the trading prices are at from 2 to 5 francs (\$0.20 to \$0.49) per 100 kilos in excess of this. Tool steel, though the electric furnace production of Belgium is small at this time, is quoted at 225 to 275 francs (\$22.05 to \$26.95) per 100 kilos and carbon, nickel and chrome steels for automobile construction are offered, when available, at from 225 to 400 francs (\$22.05 to \$39.20) per 100 kilos.

Sheets are practically unobtainable only Ougree-Marihaye and the Rodange Division of Cockerill actually being in production in this line. Ordinary rough open-hearth sheets are quoted at 90 francs (\$8.82) per 100 kilos; polished at 150 francs (\$14.70); galvanized at 200 to 250 francs (\$19.60 to \$24.50), and boiler plates at 95 francs (\$9.31). Steel castings can still be supplied by Belgium at 1.60 to 2 francs (\$0.15 to \$0.20) per kilo (2.2 lb.) but the customs duties into France have been increased since before the war 300 per cent making export impossible with France practically impossible in this line, whereas it was very considerable in 1913. The duty is now 45 francs (\$0.45) per 100 kilos as against the former 15 francs (\$0.16).

British Overseas Business Increasing

European Staff Correspondence

LONDON, Jan. 2.—The November board of trade returns gave further evidence of the growth of British overseas business. The month's imports were £143,564,907, which is £26,794,327, or 22.94 per cent,

more than the total for the same period last year. Exports of British produce for the month totaled £87,110,007, an increase of £43,891,128, or 101.55 per cent. For the 11 months the value of imports was £1,462,702,

770, an increase of £259,374,962, or 21.55 per cent. Exports of British produce for the 11 months totaled £707,515,251, an increase of £247,324,221, or 53.74 per cent. Exports of foreign or colonial merchandise for November

were returned at £20,266,933, an increase of £17,349,283, and for the 11 months the amount was £138,161,496, an increase of £110,318,174.

The quantity of iron and steel and manufactures thereof exported in November was 201,935 tons, compared with 133,952 tons in November, 1918, while the value was £6,053,812, against £3,183,086. For the 11 months the quantity was 1,996,136 tons, against 484,119 tons, and the value £56,506,967 against £33,841,123. The coal exported last month totaled 2,747,476 tons, against 2,415,965 tons in November, 1918, and in the 11 months 32,315,713 tons, against 29,600,615 tons. The value of coal exports for November was £8,529,187 as against £3,977,598, and for the 11 months £73,764,672, against £44,552,755. Iron and steel exports classified were as follows:

	November		Eleven months	
	1918	1919	1918	1919
	Tons	Tons	Tons	Tons
Pig iron	34,846	31,914	455,285	307,711
Iron, wrought, bars, angles, etc.	3,100	4,061	39,271	33,425
Galvanized sheets	775	22,337	7,870	153,677
Wire, iron or steel	212	3,360	4,735	23,869
	Pounds	Pounds	Pounds	Pounds
Black sheets...	229,517	239,036	2,137,848	2,814,122
Black plates ..	4,925	115,300	75,149	779,621
Hoops and strip	67,575	93,705	845,950	1,052,635
Cast iron	40,946	73,222	373,165	671,989
Steel bars, etc.	392,408	595,289	4,293,822	6,556,112
Wrought iron..	24,397	83,340	319,275	703,205
Timed plates and sheets..	618,860	924,619	6,933,401	9,958,970
Copper	122,250	584,874	959,910	3,413,847
Lead	10,083	101,266	194,345	695,380
Tin	408,476	523,866	4,708,384	3,336,955
Zinc	37,291	45,440	88,135	271,644

Germans Underselling Americans

It is said that American firms are complaining of German competition in the Netherlands. Alloy salesmen from Germany are offering to deliver German tungsten to Holland at 4 cents a pound, the cheapest prices from the United States being 9 cents a pound.

Another dispatch from Holland states that there has recently been a remarkable increase in the exportation of German manufactures to the Netherlands. The largest consignments are yet to be expected owing to the fact that relatively few railway cars are available.

Blast Furnaces May Buy 72-Hour Coke

Washington, Jan. 13.—The sale of foundry coke for blast furnace use is not and at no time has been prohibited by the railroad administration which is in charge of fuel regulations. This statement was made this morning at the office of the car service section. There are no restrictions of any kind on coke shipments in the

United States and official circles are unable to understand the inability of pig iron makers to get furnace coke at Connellsville and other producing regions. It is stated that the car shortage is slight and should not be a sufficient cause to prevent a fairly full movement of furnace coke, making it unnecessary for iron producers to resort to the purchase of foundry fuel at a higher price than for 48-hour coke. Any car shortage that does exist it was declared is expected to be overcome in the immediate future as the result of special instruction just issued by the railroad administration for the prompt return of coke cars which were used for coal shipments during recent coal stringency.

To Move Mill

Buffalo, Jan. 13.—The Rome Wire Works, Rome, N. Y., is soon to move its plant to Buffalo, according to reports. It is stated on reliable authority that the new factory will be located in the plant and buildings of the J. J. Carrick Company, a munitions plant at Clyde and Kensington avenues. Copper wire will be made.

Large Coal and Coking Property is Sold

Uniontown, Pa., Jan. 13.—Another transfer of coal lands and coke ovens, involving a larger sum than was paid by the American Coke Corp., recently for the Orient Coke Co., has just been completed whereby J. H. Hillman & Sons Co., Pittsburgh, conveys No. 1 plant of the Thompson Connellsville Coke Co. to a new company composed of the Weirton Steel Co., Weirton, W. Va., and E. W. Mudge & Co., Pittsburgh.

This plant has 400 beehive ovens and a capacity of about 25,000 tons of coke per month, with an additional capacity of about 15,000 tons of coal per month. It is a strictly modern plant and one of the most economic and efficient in the Connellsville regions. It carries with it a coal supply sufficient to supply the operations of the coke plant for approximately 20 years.

The Hillman company also has transferred to the same interests 1000 acres of undeveloped coal land in an adjacent field.

The Nonferrous Metals

	Future Straits N. Y.*	Lead New York basis	Zinc St. Louis basis	Aluminum	Spot anti-monny	Nickel ingot	
Jan. 7.....	19.25	61.00	8.00	9.30	33.00	10.00	43.00
Jan. 8.....	19.25	61.25	8.00	9.25	33.00	10.00	43.00
Jan. 9.....	19.25	64.50	8.00	9.40	33.00	10.25	43.00
Jan. 12.....	19.37½	65.25	8.25	9.50	33.00	10.25	43.00
Jan. 13.....	19.37½	65.00	8.25	9.30	33.00	10.25	43.00

*Future shipment from Singapore or London.
 †American Smelting & Refining Co.'s price.
 ‡Open market.

NEW YORK, Jan. 13.—Continued price advances in metals and metal products, both in this country and in foreign markets have developed in 1920. Occasional reactions have taken place in the more speculative markets, such as tin and slab zinc, but these reactions have been quickly followed by recoveries and further advances. Copper and brass products advanced one cent a pound Jan. 7 in all lines excepting seamless tubes. The base price of sheet zinc, following the advances in slab zinc and zinc ore, advanced half a cent a pound to 12c on Jan. 6. The price of sheet lead following increased price for pig lead, advanced half a cent Jan. 5 to 11c for full sheets and 11.25c for cut sheets. The price of nickel ingots advanced one cent a pound to 43c.

Premiums of 8c to 10c are being paid for aluminum sheets in the outside market over the base price of the leading interest. The price of pig tin advanced about 4½c a pound in New York during December and about 5c a pound net the first seven business days of January. In London, the price of tin advanced about £47 during December and about £31 the first seven days of 1920. The entire list of metals and metal products has been marked by advances since the new year began.

Copper prices have advanced about a quarter cent the past week, the minimum quotation to preferred consumers now being about 19.37½c for first quarter and 19.62½c for second quarter. One large producer is asking 20c for second quarter. A large transaction was booked for export to Germany through the Copper Export association, this week, the buyers being a group of German manufacturing consumers. The price paid averaged about 20.25c, New York, and payment is to be cash in dollars at New York, accord-

ing to the policy laid down by the association. Other big export with nearly the whole world in progress right now. Casting copper has been quoted close to the level of electrolytic, or about 19.25c, New York. Prompt lake is held at about 20c.

The American Smelting & Refining Co. on Jan. 12 advanced its lead quotation \$5 a ton to 8.25c, New York, 8c, East St. Louis. This action narrows by a fraction the margin between the leading interest and the outside market, which has ranged from 8.75c to 9c the past week, according to quantity of lead desired. January shipment lead is scarce and holders appear able to get whatever they want for it.

The zinc market has experienced continued heavy export demand and an improvement in demand from domestic galvanizers, who want prime western for prompt, February and first quarter shipment. These interests, due to the coal and steel strikes of the autumn and early winter were uncertain as to their coming requirements and adopted a hand-to-mouth policy which now is bringing them into the market. The price of prime western has ranged from 9.25c to 9.50c East St. Louis the past week, but today was weak at 9.25c to 9.35c.

The tin market has been excited and erratic. Rising from 60.50c on Jan. 2 to 64.25c on Jan. 5, it declined to 61.25c on Jan. 8, whence it again recovered to 65.25c on Jan. 12. The spread of prices has been great, transactions in the same grades of tin for the same positions frequently being made of late at prices more than 1c apart. Consumers who refused to consider offers of Straits tin for spot delivery at 61c recently now are confronted with quotations over 65c. Both spot and future Straits were held at 65.25c to 65.50c on Jan. 12; 99 per cent at about 63.75c to 64c.

Cleaning Gases by Electricity

Cottrell Process of Electrical Precipitation Is Employed at Blast Furnace of American Manganese Mfg. Co., Dunbar, Pa.—Results Indicate Unusual Cleaning Efficiency—Smaller Working Force Is Required

BY N. H. GELLERT AND K. V. LAIRD

FOR many years blast furnace operators, recognizing the advantages of clean gas, have attempted to effectively remove the dust and fumes from the raw gas by mechanical catchers, washers or scrubbers. During the past few years attention has been turned to the process of electrical precipitation as a possible means of cleaning blast furnace gas.

The principle of electric precipitation can most easily be understood by conceiving of a gas passing through an invisible electrical screen so fine that the finest particle of fume cannot pass through, yet occupying no space, having no material body and consequently presenting no source for back pressure. It is by means of this electrical screen interposed between the outlet of the furnace and the inlet to the hot stoves and boilers that blast furnace gas may be cleaned of its dust and fume content. The threads of electric force constituting the screen are so closely knit together that a substance must drop below its molecular form to get through when conditions are correct for the screen to operate. Yet, these lines of force, having no material body, do not interrupt the flow of gas, on which they have no effect whatever.

The practical application of electrical precipitation is almost as simple as the principle. The gas is conducted through a vertical pipe, entering from the bottom. An electrode chain or wire, suspended vertically in the exact center of the pipe, is held taut by a weight at the bottom. This electrode is charged with high tension unidirectional current and is insulated from the pipe, which is grounded. When the dirty gas passes through the pipe and comes in contact with the charged electrode, it becomes ionized. As the electrode is negatively charged and has a corona

Application to Blast Furnace is New

ELECTRICAL precipitation, a process extensively used in the cement industry, now has been applied to cleaning blast furnace gas. The first furnace in the world to be equipped with this new type of cleaning apparatus has been in operation several months and a second installation has been completed. In the accompanying article, which is from a paper presented at a meeting of the Philadelphia section of the American Iron and Steel Electrical Engineers, Nov. 1, 1919, the authors explain the principle of electrical precipitation, describe the first plant built, outline the method of operation and comment on the results obtained. N. H. Gellert and K. V. Laird are president and assistant electrical engineer, respectively, of the Gellert Engineering Co., Philadelphia.

discharge due to the high potential impressed upon it, the ionization of the gas is rapid and thorough. The gas molecules carry the charge to the dust particles which for the most part are negatively electrified since the electrons prevail in the gas. Immediately upon being charged, the

dust and fume particles are repelled by the electrode and are deposited on the sides of the pipe which interrupt their flight from the chain.

Since the force due to the upward velocity of the gas is very much greater than the force of gravity, the resultant of the two is a vertical force upward. The charging of the dust particles through the ionization of the gas causes a horizontal force, as the action of the repelling of the particle from the chain is at right angles to the chain. The resultant of these two forces is a diagonal of a parallelogram, having both these forces as sides. If the vertical force is too great for the pipe the horizontal force may not be sufficient to cause a resultant that would precipitate the particle of dust to the side of the pipe. While the particle of dust would be acted upon by the horizontal force, the resultant might be such that the particle would not travel to the side of the pipe within its length.

The problem in electrical precipitation, therefore, is to regulate the forces so as to form a resultant which will precipitate the particle of dust to the side of the pipe.

The first blast furnace in the United States equipped with a precipitation plant is that of the American Manganese Mfg. Co., Dunbar, Pa. This plant consists of an electrical house and the precipitators proper.

The electrical equipment draws its power from a steam driven 3-phase, 450-kilovolt-ampere, 2300-volt unit built by the General Electric Co., Schenectady, N. Y., operating at 150 revolutions per minute. The line voltage furnished by this machine is stepped down by 230 volts by a bank of two 25-kilovolt-empere, 60-cycle transformers, made by the Westinghouse Electric

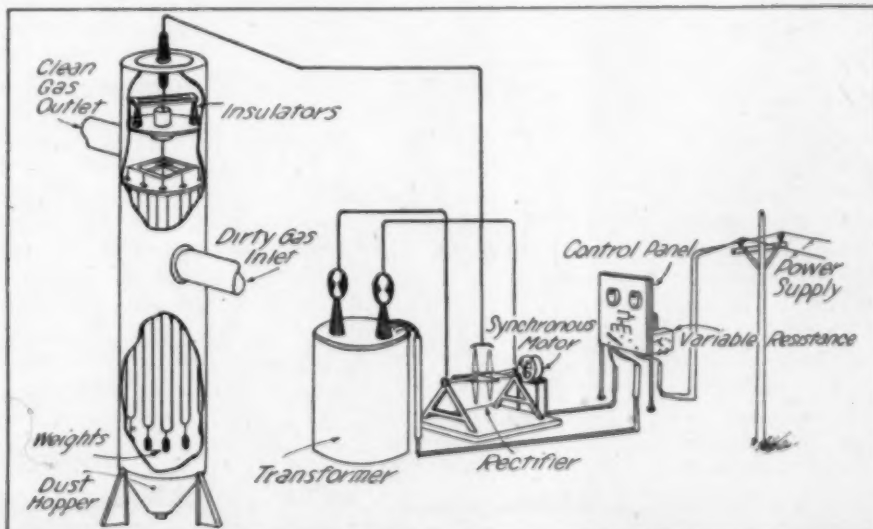


FIG. 1—DRAWING SHOWING ARRANGEMENT OF VARIOUS UNITS OF ELECTRICAL PRECIPITATION INSTALLATION FOR BLAST FURNACE GAS

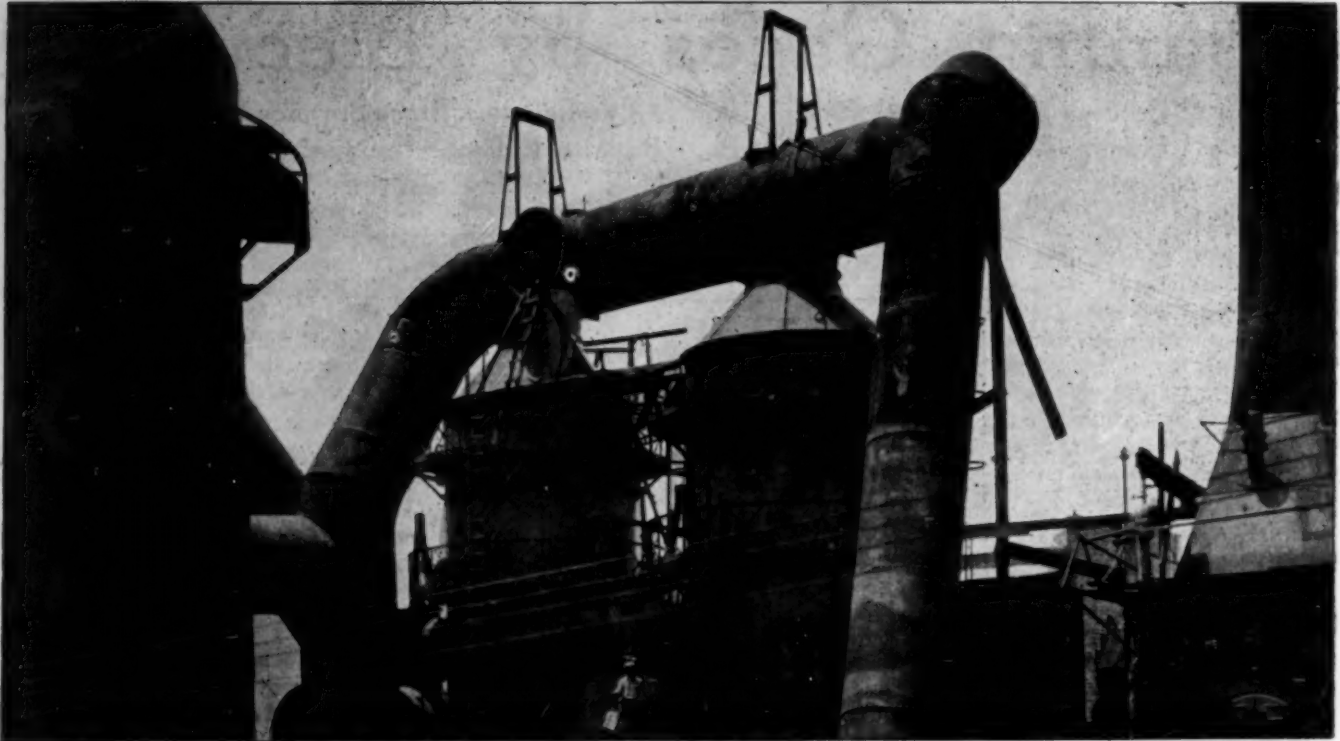


FIG. 2—PRECIPITATION PLANT OF TWO UNITS AT THE FURNACE OF THE AMERICAN MANGANESE MFG. CO., DUNBAR, PA.

& Mfg. Co., Pittsburgh, connected in open delta. The switchboard stands in one corner facing the other equipment at its left. Each electrical set is completely surrounded by an expanded metal guard having but one door through which it may be entered. The niches provided for the motors place them outside the guard work and allow the operator to inspect them when in operation. This arrangement is shown in Figs. 8 and 9.

The switchboard consists of four panels, the righthand one of which is a feeder panel controlling the incoming line, prior to its connection with the switchboard buses. The three panels to the left of the feeder each control a complete unit of the installation, consisting of a high-tension transformer and rectifier motor.

Description of Rectifier Connections

The end of each transformer lead is attached to the rectifier by means of a short spring which allows the stationary part of the rectifier carrying the shoes to be adjusted to the proper timing of rake and break. Any large amount of adjustment in order to obtain proper timing is made by resetting the coupling between the motor and the rectifier. The rectifiers consist of a stationary portion carrying four shoes and a rotating portion carrying four copper tips. The shoes are each supported upon a heavy insulated arm radiating from a central hub in a plane perpendicular to the shaft. The rotor is mounted upon the shaft and has four

radiating insulated arms which carry the tips with their connecting wires. These wires connect the tips together in two pairs of adjacent tips.

The motor driving the rectifier is a four-pole motor of the synchronous induction type which operates on 60-cycle current and revolves at 1800 revolutions per minute. As there are 3600 cycles in one minute, there are two cycles of the alternating current to every revolution on the motor and rectifier.

How Potential of Negative Polarity is Maintained

The rotor arms are each opposite the rectifier shoe at four positions which correspond to the four alternations

passed through during every revolution, two positive and two negative. It will be noted that the wire connections between the rotor arms will be in four different positions relative to the stator shoe during each revolution. During each of one pair of these positions one side of the transformer is connected to the ground shoe and the other one to the line and during the other pair of positions, which alternate between the first two, the connections are reversed. This, then, constitutes a pole changing switch running in step, due to the synchronous motor, with the alternating current. It is desired to always supply potential of negative polarity to the precipitator electrodes and therefore the transformer terminal, which is negative during any alternation, must be connected by the rectifier to the high-tension lines. The synchronous induction motor may come into step with the iron magnetized as of either polarity on a given pole. This allows a rectifier to run in such a relation that either positive or negative potential may be present at the top shoe.

In case the wrong polarity is observed upon starting the equipment, all that is necessary is to reverse the double-pole, double-throw switch on the switchboard to obtain the proper polarity.

Auxiliary Safety Devices

The auxiliary safety devices consist of apparatus for cutting off the high voltage transformer at the switchboard in case the doors in the safety guards

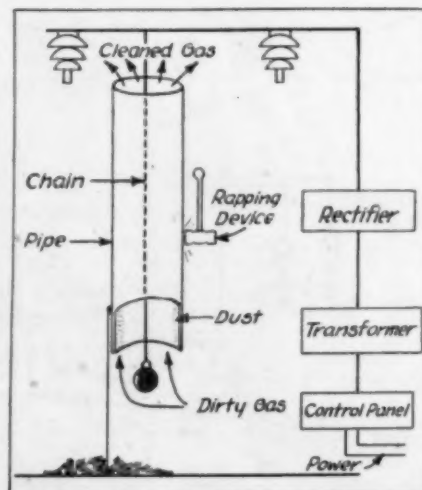


FIG. 3—DRAWING SHOWING PRINCIPLE OF ELECTRICAL PRECIPITATION

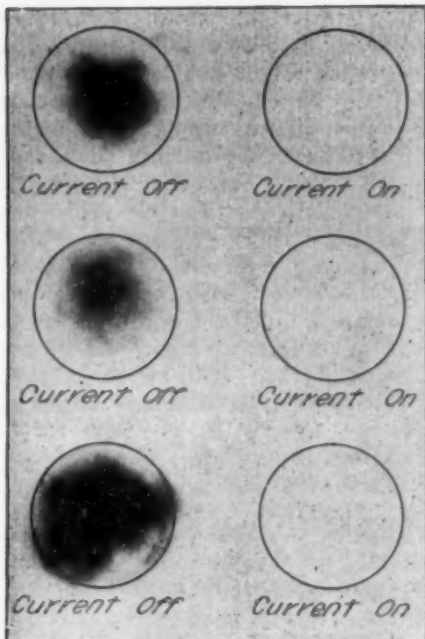


FIG. 4—DUSTOGRAPHS SHOWING RELATIVE DUST CONTENT IN CLEAN AND DIRTY GAS

surrounding the electrical sets are opened, a device for shutting down the entire precipitator installation in case the gas pressure goes off the mains, and a system of safety signal lights on the precipitators.

The device for preventing anyone entering the cage about the electrical set while the high tension is on is operated by a door switch placed on the hinge side of the door of the cages. This switch is closed when the door is closed and in each case is connected in series with the circuit breaker to

voltage release coil of the particular set concerned. This device is a very valuable guard against accident through confusion of the various units in the mind of the operator.

Low Gas Pressure Gives Warning

The safety pressure relay is operated by gas pressure conducted into the building through a 3/8-inch pipe connection extending at its outer end through the top of the gas main. The relay consists of a U-tube made up of pipe fittings in one leg of which a float is placed. The gas pressure is exerted downward upon the oil in one side and forces the surface on the opposite side upward to a height sufficient to balance the downward pressure. This upward movement of the oil level carries the float with it and closes the contact in the circuit of the no voltage release coil of the main oil switch. When the gas pressure is released the float falls, opening the first contact and closing another, which lights a warning signal light at the top of the main oil switch panel. This then gives a direct indication when pressure is either off the mains or of too low a value to operate the relay.

The signal lights upon the precipitator are operated by means of a special switch attached to the operating shaft of the high-tension disconnecting switch. This is a two-position switch making a set of contacts both when the disconnecting switch is open and when it is closed. The closed position controls the red light of the signal box upon

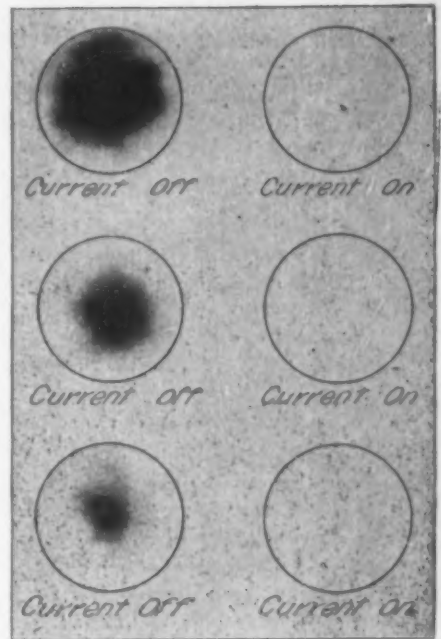


FIG. 5—DUSTOGRAPHS SHOWING RELATIVE DUST CONTENT IN CLEAN AND DIRTY GAS

the precipitator balcony, and the open, a green light in the same box.

The second part of the precipitation plant consists of two electrical precipitators, which are cylindrical in form and have conical tops and bottoms. Each cylindrical shell is 36 feet high and 12 feet in diameter. The shell is of 5/8-inch steel plate and is riveted gas tight at its seams. The whole cylinder is supported vertically on four built-up columns tied in to the shell without any beam work. Each shell has four platforms. The lowest one on the

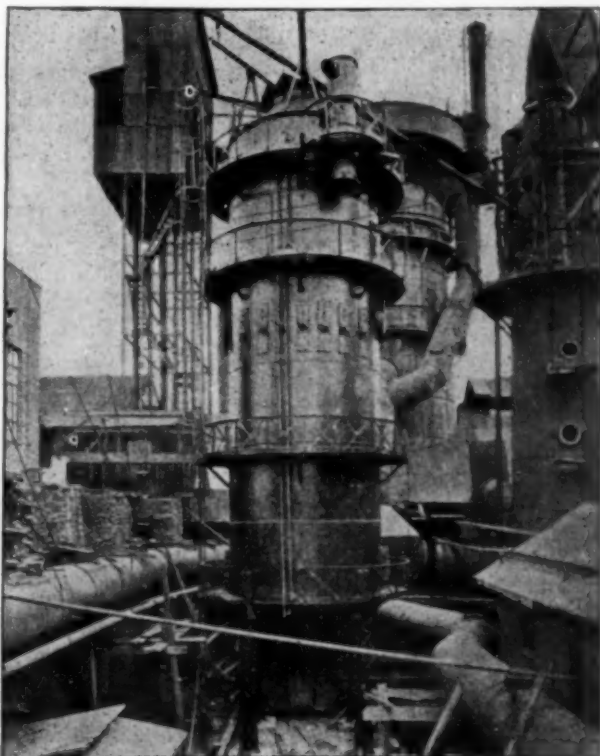


FIG. 6—PRECIPITATOR AT SHERIDAN, PA.

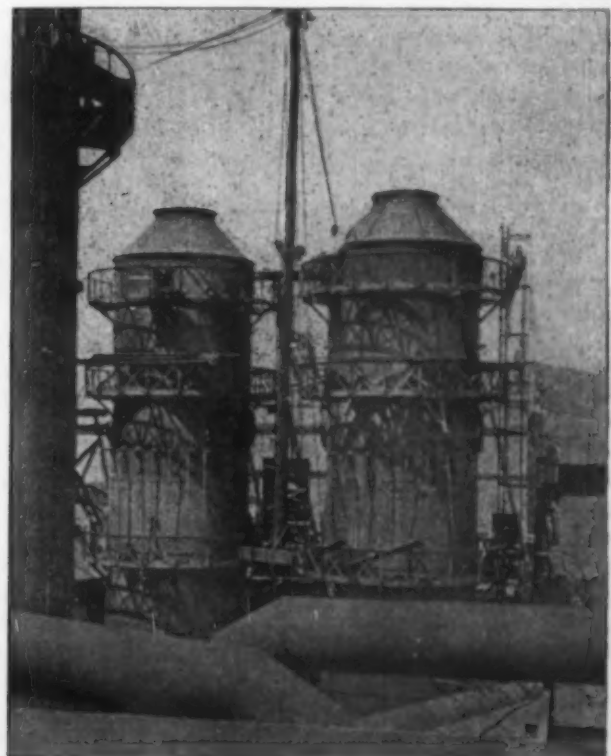


FIG. 7—DUNBAR PRECIPITATOR READY FOR PIPING

level with two doors on opposite sides of the shell provides access to the bottom insulator chamber. The second one, about one-quarter of the way up, is for ease in getting to the bottom of the electrode chains, the steadying devices, and the bottoms of the pipes. The third balcony, a little over two-thirds of the way up, affords access through two doors to the tops of the pipes and the electrode hanging frame and the electrode rapping device. The top balcony is used at the two top doors for entrance to the top insulator chamber.

The bottom of the precipitator in reality is a hopper within a hopper. The inner hopper is perforated with four holes protected by pipe canopies through which there pass structural members for supporting the steadying frame which prevents the chains from swaying and consequently getting out of place at the bottom.

These structural members extend from the top of the bottom insulators which rest on shoes riveted to the bottom of the outer hopper. In this way, the dust is kept in the inner hopper while a dead gas space exists in the outer hopper where the steadying insulators are located. The middle portion of the precipitator contains the pipes. These pipes, 6 inches in diameter and 10 feet long, extend through the header plate, are strongly supported at about three-quarters of the way up from the bottom of the precipitator and are held in position by a bracing frame placed near the bottom of the pipes so that no pipe has more than $\frac{1}{8}$ -inch play. The gas inlet is below the header plate so that any gas coming in has to descend around the pipes to the bottoms and can only find exit through the pipes themselves.

All Chains Hang From Frame

Above this is the electrode chamber containing the electrode rapping frame for rapping dust from the chains and the main frame from which all the chains are hung. Every part of this compartment is subject to the free circulation of the gas. After the gas has reached this part of the precipitator, it is supposed to have been cleaned of most of its dust content and is ready for discharge into the main. It therefore goes into an apron-like opening extending centrally above the electrode chamber and is conducted through the pipe and out of the top of the precipitator into the gas main.

Located between the rows of pipes are the rapping hammers about midway of their length. Each pipe is reinforced with two rapping collars located at the one-third and two-third points, approximately. The hammers are oper-

ated by levers outside the shell, which are swung to and fro, one at a time, rapping the upper and then the lower collars on these pipes. Each hammer strikes four pipes, alternating, two at a time. Several hammers, about seven or eight, are located on each one of these shafts so that the operator swinging one lever raps as many as 20 or 30 pipes at a time. There are seven levers in all.

The outlet pipe which carries cleaned gas to the hot stoves and boilers is at

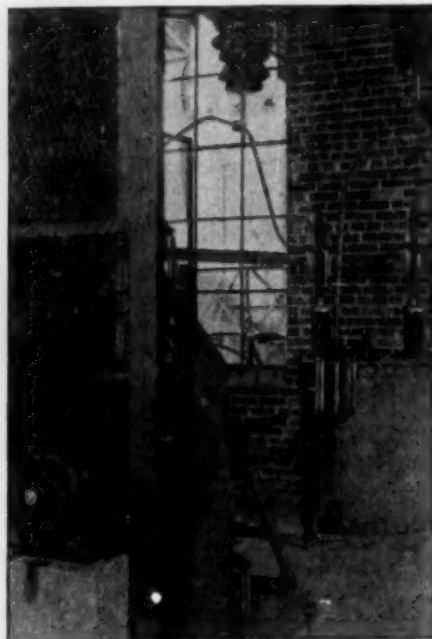


FIG. 8—MOTOR, RECTIFIER, TRANSFORMER AND HIGH TENSION CONNECTIONS IN ELECTRIC HOUSE

the top of the precipitators. One precipitator has two inlets 3 feet in diameter and the other has one inlet 4 feet in diameter by way of experiment to determine a much discussed point as to whether the question of distribution is a vital one in a precipitator of the closed type.

A second installation has been made at a furnace at Sheridan, Pa. The plant is about one-half the size of the one at Dunbar, but is similar to it in many respects.

The method of operating a precipitation plant differs greatly from the average conception. At the present time, the day and night operators at Dunbar are men who had never thrown an industrial switch, before they were taught to run the precipitation plant. This does not mean that any unskilled laborer may be put in charge of a precipitation plant, but it does mean that given a fair amount of common sense and good judgment, an unskilled man may be taught to operate a precipitation plant successfully.

The first step when starting a new plant is to allow the gas to go through

the precipitators and to make sure that every part is purged of air so that no mixture of gas and air exists. After this has been done, the synchronous motor is started by throwing in the 3-phase switch controlling the circuit to the motor. The mechanical rectifier is then revolving and is ready for duty. The outdoor switch is thrown in, causing a red signal light to appear on the balcony. This indicates to the operator and others that current is through the precipitator or will be put through shortly. Only the presence of a green light is an indication of safety, and the absence of any light at all indicates that there is trouble somewhere. After this has been done, the circuit breaker is closed on the switchboard.

Operating the Switches

Before throwing in the transformer switch, the operator should see that all the resistance is in the transformer line so that no big load will suddenly be thrown on the transformer. He should then see that the 5-tap switch is on the lowest tap of the transformer. He then starts with the lowest possible load. The double throw switch then is closed. If the wrong polarity is indicated by low primary voltage and high amperage and the flaming of the mechanical rectifier, the switch should be pulled after the circuit breaker is thrown and put back in the reverse position. If the polarity is then correct, the voltage will be high and the amperage low. At this point, the operator should cut out some of the resistance in the main line so as to increase the current discharge or the current flow in the precipitator proper. The procedure should be continued until the point just before arcing in the precipitator takes place. This is usually the best electrical condition for precipitation.

Beyond this, there is nothing further in the operation of a precipitator excepting that with certain gases that are exceedingly dry and do not carry the 35 grains of moisture per cubic foot of gas that is normally found in blast furnace gases, a slight amount of water must be added through humidification sprays to get the best results in precipitation.

Good results may be obtained without humidification; nearly perfect results may be obtained with humidification. It has been found by test work carried on by the authors that from 20 to 40 grains of moisture per cubic foot of gas are usually necessary for the very best precipitation. In such cases, the visual clean up is practically perfect.

Frequently gas conditions change. In a blast furnace operating unevenly, there may be conditions of pressure and

temperature, etc., where it is advisable to either raise or lower the voltage. If the maximum of efficiency is to be obtained, the operator should carefully see that the greatest voltage possible is carried at all times. Should the gas condition change so that this voltage which the operation has caused to be impressed upon the precipitator is too great, the circuit breaker will be released. The electrical procedure then is exactly as at starting.

During casting and at times when the pressure in the mains is reduced below a certain minimum, the circuit breaker is automatically thrown so that the electrical current is not flowing through the precipitator. The reason for causing this to be done is that there is no danger of explosion in the precipitator except when air and gas exist in the mains and in the precipitator at the same time. In order to avoid any of these puffs occurring in the precipitator from purely electrical causes, the precaution is taken to cut off the current when the pressure of the gas goes down. In order to eliminate the human element entirely from the regulation at this point, automatic devices are employed. In the few months that the plant at Dunbar has been operated, not a single puff has occurred in the precipitator.

Removing Dust Collections

After the precipitator is operated from one to four hours, depending on the dust content of the gas, the electrical operation becomes erratic and electrical discharges take place rapidly. The voltage drops and the amperage increases. This indicates that the gap between the pipe and the electrode has decreased due to the deposit of dust on the sides of the pipe. The gas is then cut off by means of a quick closing damper situated in the top of the precipitator and the pipes are rapped. The chains also are rapped. Current, however, is first cut off from the precipitator before anything is done. At the end of the rapping, the precipitator damper is opened again and the current is put on as before. The whole time taken in rapping and shutting down and starting up is between two and three minutes. With a very heavily dust-laden gas, rapping must take place every hour, but at Dunbar this was not necessary as the dust content was not over four to five grains of dust per cubic foot of gas.

In the short time that the plant at Dunbar has been operated, it has been, of course, difficult to get data showing what the precipitators have done. As it is the first installation of its kind in the world, there were many things that needed attention and change, and consequently the effort was concen-

trated on keeping the precipitators operating at their maximum efficiency rather than in determining the maximum efficiency. Visual demonstration was the greatest guide. Dustographs taken by holding a small piece of paper for a stated period of time before the outlet of a small stream of gas impinging on the paper gave a fair indication of what the precipitators did when the current was on and when the current was off. Typical dustographs are shown in Figs. 4 and 5. When the current was off, the dust came through the precipitator without being affected at all. The result was that the dust deposited rapidly as gas came through the precipitator without being treated. When the current was put on, the gas impinged against the paper, depositing that dust and fume which got by the cleaning mechanism. Most of the time, this amounted to practically nothing.



FIG. 9—VIEW OF ELECTRIC CONTROL BOARD SHOWING WOVEN WIRE PARTITION BETWEEN MOTORS AND RECTIFIERS AND TRANSFORMERS

Before the precipitators were installed from four to six men were constantly employed in cleaning the stove wells, combustion chambers and boilers of their dust burden. The dust discharged into the stoves often formed into large masses the size of small boulders and could not be removed from the stoves before being broken up with sledge and bar. This, of course, was expensive work and very often resulted in the destruction of a large amount of brick work by hammering. After the precipitators were started in operation, the men were taken off the job and for weeks at a time not a single man was used to clean the material from the stoves and boilers because of the entire absence of dust deposits. It was only after difficulties were encountered with the insulators and the plant was shut down for insulator repairs that dust began to collect in the stoves.

While the primary purpose of a precipitator is not to collect potash, nevertheless, the potash content of the dust when the ores have any appre-

ciable amount of potash, makes this a valuable by-product. Blast furnaces are usually located near where they can readily dispose of their potash to agricultural communities, and it is claimed that this item alone is sufficient to pay the operating expenses of the plant. The power consumption is small. From 15 to 20 kilovolt-amperes are used at Dunbar to clean from 45,000 to 50,000 cubic feet of gas per minute. One operator is needed during the day and one during the night. Eventually, it is planned to have an automatic mechanical rapping system which will eliminate the need for the present operator's helper and make it possible for the operator to control everything from the electrical house. This will entirely eliminate manual labor from the operation of the plant. The dust as it is collected is dumped from the bottom of the hopper, and when it is sold for

its potash content is put into cars and shipped away. At Dunbar the potash content of the dust has run from 7 to 9 per cent on pig iron and it is expected that it will run as high as 20 per cent of ferromanganese.

The cleaning results by actual measurement at Dunbar have demonstrated that the electrical precipitation plant can clean gas to less than one-tenth of a grain of dust per cubic foot of gas at standard conditions.

Emphasizes Importance of Airplanes

That the success of future wars will depend more and more upon aircraft was strongly emphasized by Col. E. A. Deeds, Dayton, O., former chief of equipment, division air service, United States army, in a lecture on the future of aviation delivered before the American Society of Mechanical Engineers at its recent convention. With the impetus already received,

declared Colonel Deeds, aviation will progress rapidly if congress makes the necessary appropriations for engineering work. One set of blue prints and a model of an up-to-date battle plane, fully equipped and designed for American manufacturing methods would have saved the United States nine months of delay during the war.

After devoting considerable attention to future military planes, Colonel Deeds took up the subject of commercial aviation. He believes that the risks involved, cost incurred and other uncertainties make commercial aviation for the immediate future impracticable as a private enterprise undertaken for profit except in lim-

ited fields. The government can afford to assist in establishing this new time-saving transportation agency. This should take the form of moderate appropriations covering the long period of years.

According to the colonel, the first requirement for commercial aviation is the establishment of landing fields.

Using Army Gas Masks in Industry

BY A. C. FIELDNER AND S. H. KATZ

WORKMEN no longer need put up with inadequate and partial protection against corrosive acid fumes, chlorine, bromine, oxides of nitrogen, ammonia, etc., by tying a moist towel or handkerchief over the mouth and nose. The army-type gas mask with a suitably filled canister for the gas in question provides complete protection for both lungs and eyes.

However, the gas mask is not effective in every gaseous atmosphere. It has serious limitations which should be thoroughly understood by every user. Important recommendations which will aid materially in keeping the masks in good order and will lead to their use under proper and safe conditions, follow:

1. Know the nature of the atmosphere in question so far as possible and be certain that you have the proper canister, as shown on the label, before entering the gas. A list of atmospheres where army gas masks will not protect, appears in the accompanying table.
2. Read the label on the canister and use it only for the gases indicated thereon.
3. Before entering a poisonous atmosphere,

From a bulletin issued by gas mask laboratory, chemical section, Pittsburgh experiment station of United States bureau of mines. The authors, A. C. Fieldner and S. H. Katz, are supervising chemist and assistant physical chemist, respectively, of the Pittsburgh station.

Do Not Use Gas Masks Indiscriminately

ARMY gas masks are not adapted to indiscriminate use in industrial plants. Although they are effective in certain atmospheres, they do not protect against blast furnace gas, producer gas and the products of many metallurgical operations. The accompanying article, based upon thorough investigations made by the United States bureau of mines, should be carefully read by the operating heads of blast furnace and steel plants, where ex-service men are apt to place unwarranted reliance upon army masks.

here, adjust the gas mask with care and make sure of the tightness and fit by holding the hand over the lower canister opening and inhaling. If there are no leaks a vacuum should be maintained for at least 15 seconds.

4. Enter the suspected atmosphere cautiously; if a tickling sensation in the throat or irritation of the eyes is felt, retreat immediately to a safe place and readjust the mask to the face, or, if the face piece was tight, change the canister. This statement applies to irritating gases

only; nonirritant gases, such as carbon monoxide, give no warning.

5. Never enter a room where a lantern will not burn; such atmospheres are likely to be suffocating from lack of oxygen. Oxygen breathing apparatus or air helmets must be used in atmospheres deficient in oxygen.

6. Always ventilate a confined place as much as possible before entering with a mask. A smoldering fire in such a place may have used up the oxygen and produced dangerous quantities of carbon monoxide against which the ordinary gas mask furnishes no protection.

7. Do not use the army gas mask for protection against blast furnace gas, producer gas, illuminating gas, coal gas, natural gas or any atmosphere containing carbon monoxide.

8. For hygienic reasons, gas masks should not be worn by more than one person without sterilization of the face piece. They should be cleaned and sterilized after use by washing the mask in two per cent of lysol in a bucket of warm water, then hang the mask up to dry with the lysol solution adhering.

9. Wearers of gas masks should be given careful instructions in their use and maintenance and regular drilling in adjusting gas masks.

10. Remember that the rubber materials in the gas masks will deteriorate. They are best kept in a closed box to protect them from the action of light and moisture.

11. Regular inspections at least once a month should be made to detect deterioration of rubber, cuts, and folding

Atmospheres in Which Army Gas Masks Do Not Protect

Gas or atmosphere	Where found	Remarks
Methane	May be found wherever natural gas is produced or used; also in coal mines.	No adequate absorbent is known. The gas is harmless in itself but may cause suffocation when present in air in sufficient quantity to reduce the oxygen content below 13 per cent.
Atmospheres deficient in oxygen.	Flues, apparatus in industrial plants, mines and closed rooms in buildings after fires and explosions.	The wearer of a gas mask must have an adequate supply of oxygen in the atmosphere around him, to support life, regardless of the content of poisonous gas. For entering an atmosphere deficient in oxygen, the self-contained breathing apparatus, or helmet supplied with air from a pump through a line of hose, should be used.
Atmospheres containing higher concentrations of any toxic gases.	Chemical and metallurgical apparatus. Rooms where large quantities of gas are evolved without adequate ventilation.	The gas mask is essentially an apparatus for removing toxic gases in comparatively low concentrations from air breathed, such as existed on the battlefield. Although there are exceptions, it may be said that unless special information as to the activity and capacity of a mask is available, it should not be used in toxic gases in excess of one or two per cent.
Carbon monoxide.	Products of incomplete combustion of coal, wood and most combustible matter. Producer gas, blast furnace gas and products of many chemical and metallurgical operations. Coal gas, water gas, after damp in mines after fires and explosions.	No adequate absorbent is available at present for this gas. The army mask canister is useless against it. Since carbon monoxide is odorless and tasteless, and may give no warning effects, and because of its widespread occurrence, it is the most dangerous of all gases commonly met in civil life.

In addition to the above limitations for all gas masks, it should always be realized that canisters are now being produced commercially with absorbents which may have a high capacity for a single gas or

class of gases and no absorbing power for other kinds. The purpose and capacity of the canister should be exactly understood by the wearer of a gas mask before he entrusts himself to it in a dangerous atmosphere.

cracks. Valves and canisters should be inspected and the mask tested for tightness and adjustment.

12. Keep extra closed canisters on hand for quickly replacing exhausted canisters.

13. Keep the canister closed when not in use and avoid getting water into it; wet canisters must be discarded.

Book Review

The Iron Hunter, by Chase S. Osborn; cloth; 316 pages, 5½ x 8 inches; published by the Macmillan Co., and furnished by THE IRON TRADE REVIEW for \$2.

The author, former governor of Michigan and an authority on iron ore and the location of its deposits, writes this book in the form of an autobiography but by the skillful utilization of his knowledge of iron ore has produced a remarkable narrative of ore prospecting in many parts of the world.

Early in his life Mr. Osborn became interested in the iron ore deposits in this country and was active in a number of exploring parties in the Lake Superior regions, where he succeeded at various times in locating large deposits. Although active in political affairs in the state of Michigan for several years he maintained his interest in this subject and managed from time to time to make further investigations. After his governmental duties were finished he took a trip to Europe where he visited a number of deposits and succeeded in finding new deposits which later may become factors in the world iron activity.

Because of his interest in iron ore the author has named the book "The Iron Hunter." His interest has en-

couraged him in doing many unusual things and has led him in his search for iron from one section of the country to another and even to foreign countries. At the present time he is considered among the great experts in this line. Speaking of iron ore Mr. Osborn says:

"There is a romance about iron that has always fascinated me and it holds me yet as a magnet attracts. Iron ore and steel are of greater importance than wheat, because there are many good substitutes for wheat. There is none for iron ore. It has a glory of usefulness all its own. Into cannon and into the surgeon's knife enter iron ore. The bellowing death of one and the delicate life-saving of the other, involves the use of steel. They were a lump of iron ore yesterday. Great locomotives made from iron rush over rails of iron ore, performing missions of peace and war. Harvest fields are gambogian in their ripeness and renitent until the reaping machines come. Then they lie down peacefully with that child of iron ore."

This book should prove of considerable interest to anyone engaged in the iron and steel industry. It contains a great wealth of accurate information regarding ore which is so cleverly linked together with stories of human interest that the absorbing of the technical matter is simple and pleasing.

Testing Society to Meet at Asbury Park

The annual meeting of the American Society for Testing Materials

will be held at the New Monterey hotel, Asbury Park, N. J., during the week of June 21. This is a marked departure from the precedent of long standing of holding the conventions of this society at Atlantic City.

The growth of this organization during the past year is indicated by the election of 401 new members, compared with 303 for 1918, and 362 in 1915, which represented the greatest accession in membership during a 12-month period until the record established last year. The net growth in membership was 249, making the present total membership 2572.

Studies Export Field for American Zinc

The American Zinc institute has issued the report of an investigation by George C. Stone on the possibilities of Europe as a market for American zinc. Mr. Stone was able to obtain a balanced perspective of the opportunities which Europe holds for America in the matter of zinc exports, and was in personal contact with large zinc producers, engineers, metallurgists, bankers, merchants and members of government boards in England and continental Europe. In his report Mr. Stone has taken into account the economic and sociologic factors with reference to national and international industrial conditions.

England and France offer this country little opportunity for zinc exports, but Belgium and Holland are possible markets for American ore. Germany will in all probability need to import high-grade ore. The United States seems to be the only country now in

Manganese Sulphide Inclusion Takes Form of a Cross



MANY novel structures are shown to the metallographist under the microscope. One of these is illustrated in the accompanying micrographs. In these micrographs which were made by C. I. Niedringhaus, metallurgist of the Mesta Machine Co., Pittsburgh, may be seen an inclusion of manganese sulphide in the shape of a cross. The boundaries of the ferrite are shown in the figure to the right, which is about 100 magnifications, while the figure to the left is at approximately 225 magnifications. The sample was taken from the



head of a large nickel steel casting, about half way between the center and the edge and close to a pipe which had formed. The composition of the heat of steel from which the casting was made: Carbon, 0.43 per cent; silicon, 0.30 per cent; sulphur, 0.036 per cent; phosphorus, 0.038 per cent; manganese, 0.53 per cent.

a position to meet the European demands for slab zinc.

Belgium, despite the pessimistic forecast of a year ago, will probably react more quickly than any of her allies, and while conditions there are far from normal, the optimism of Bel-

gium is in marked contrast to that of other nations. The questions of foreign exchange, transportation and labor and their bearing upon American zinc exportations are fully discussed in the report. Mr. Stone views from four geographical angles the

problem of where the Australian ore will be smelted, Belgium seeming to be more naturally favored in this respect. So far as the United States is concerned, relatively high zinc freights to Europe and an adverse exchange are formidable obstacles.

Using Spiegeleisen in Steelmaking

BY HENRY D. HIBBARD

SPIEGELEISEN was the first manganese alloy employed, about 60 years ago, for deoxidizing steel made by the bessemer process and later in 1865 for steel made in the open-hearth furnace. The name spiegeleisen was that of a white manganiferous pig iron made in Prussia containing from 7 to 8 per cent of manganese. Irons richer in manganese were made from time to time in the years which followed, as they were found to be desirable. But the same name contracted to *spiegel* in the shop, was applied to all such irons up to those containing over 20 per cent of manganese. To irons containing more than 20 per cent manganese the name of ferromanganese was given when they were first made, about 1870. As time went on richer and richer manganese alloys were made until our present standard of 80 per cent alloy came into general use about 1880. As ferromanganese became richer in manganese so did the irons included under the name of *spiegel* and now the dividing line between *spiegel* and ferromanganese may be fairly taken at 40 per cent. All richer alloys are called ferromanganese and all of 40 per cent manganese or less are called *spiegel*.

A more condensed form of manganese has several advantages. Because of this ferromanganese became the popular and almost universal form for adding the element to the molten metal. The advantages of a more condensed form of manganese lie in the smaller weight to be handled which renders preheating and premelting unnecessary. At prewar prices it is perhaps the cheapest form of manganese as well. It is brittle, enabling it to be easily broken to size when desired. Then for soft or low-carbon steel there is the important additional advantage of its high ratio of manganese to carbon, about 12 to 1. This favors greatly the making of such steels, in that the carbon content can be kept down while an ample amount of manganese is added. When more carbon is needed, in the harder steels, than the ferromanganese contains it is provided by adding pig iron, or molten crude iron,

Studies Use of Spiegel in War Period

ON Jan. 7, 1918, Henry D. Hibbard, Henry M. Howe, J. E. Johnson Jr., Bradley Stoughton and others, reported to the bureau of mines that spiegeleisen could be used instead of ferromanganese for recarburizing 70 per cent of the steel produced in the United States at that time. They assumed the steel output of 1918 at 44,037,000 tons and estimated that 27,017,000 tons could be recarburized with *spiegel*. The remaining 17,020,000 tons consisted of ingots for plates and better quality sheets, and for pipe, other low carbon steel requiring extra fine surface; steel below 0.10 per cent carbon; and steel castings made by the converter process where plants are not equipped with suitable furnaces for melting recarburizers.

The accompanying article is from the report submitted to the director of the bureau of mines in 1918, and withheld from publication until recently because of its confidential nature.

or carbon in the form of coke or coal.

There has never been a doubt as to the suitability of *spiegel* for making the higher carbon steels of good quality. Its use requires no particular care, provided that it be melted or heated so as not to cool the metal beyond a permissible amount. When it was supplanted this was done for the reasons already given.

The United States has large domestic resources of ores suitable for the manufacture of spiegeleisen, and of intermediate grades of ferromanganese, containing 70, 60 and 50 per cent of manganese respectively. This being the case it is, therefore, desirable to ascertain to what extent it would be possible to use a greater quantity of *spiegel* and of intermediate grades of ferromanganese.

The following is an example of how spiegeleisen was adapted to the requirements of a steel company. A *spiegel*

mixture has been used exclusively by this company for a number of years for steels containing over 0.30 per cent carbon. The alloy is added molten. A mixture of standard 20 per cent spiegeleisen, pig iron and, in some cases, ferrosilicon is made up, so that the molten alloy will exactly satisfy the requirements of the steel for carbon, silicon and manganese. The carbon in the bath is worked down to 0.15 per cent and the residual manganese averages 0.17 per cent at tapping out time. The manganese loss in the cupola and ladle is 30 per cent by weight.

The finished steel is fairly uniform in quality, and for steel above 0.30 per cent carbon this company considers it the most effective method of adding manganese. Test samples of finished steel are taken after pouring the first ingot and again near the end of the teeming. These samples are almost identical in manganese and other constituents.

This company claims to be the first to use molten *spiegel* in open-hearth steel but several other plants are now using it in the same way.

It seems at least possible that steel lower than 0.30 per cent carbon may be satisfactorily made by means of this practice by using a higher manganese spiegeleisen mixture. On the basis of the method used by this company for computing their mixture, the following table has been prepared to show how, from the chemical standpoint, steel containing 0.20 per cent carbon can be made from various spiegeleisen mixtures:

Per cent carbon in bath	Lbs. alloy per ton of steel	Per cent Mn. in alloy	Per cent loss Mn.	Per cent carbon in alloy
.08	50.0	18.85	30	4.8
.10	43.2	25.60	33	5.2
.12	32.5	36.10	37	5.5
.15	18.7	66.00	40	6.0

From this table, it is evident that with the use of a 66 per cent mixture, the heats could be tapped at 0.15 per cent carbon. If carbon were 0.10 per cent at tapping a 25.60 per cent manganese mixture could be used. It would of course take somewhat longer to work the carbon down from 0.15 to 0.10 per cent and the output of a given furnace per day would be decreased proportionately to the increased time required.

1920 Trade Factors Conflicting

Sound Underlying Conditions in Various Lines of Industry Arising From Shortage of Supply Are Mingled with Growing Unsettling of Credit and with the Effects of Extravagance and Intemperate Speculation—Reserve System Is Bulwark

BY JOHN W. HILL

TO THE business man seeking to chart his enterprise to the course which will carry it safely through 1920, a study of the customary year-end industrial forecasts is somewhat disappointing. A multitude of complex factors rise to confuse the outlook and render prognostication confessedly a precarious undertaking. Moreover the disconcerting manner in which the 1919 predictions of business stagnation and lower prices were discredited by actual developments, has made even the keenest students of affairs less bold in proclaiming the precise nature of coming events.

Discussions of the future have revolved about such questions as whether exports will expand or dwindle; whether Europe is solvent or bankrupt; whether the federal reserve board will be able to prevent undue expansion of banking credits; whether prices will advance or decline; whether the country having had its fling at unrestrained speculation, at foolish extravagance and wasteful uneconomic strikes, will be restored to its sober senses this year and get down to hard work and saner living; how soon production will catch up with accumulated demand; what is in store for the railroads; whether excess profits taxes are to be eliminated; whether in brief, business executives are justified, as one writer expresses it, "in going full steam ahead for another year or had better slow down, taking soundings as they proceed."

Practical men and theorists, optimists and pessimists all have expounded their respective views on these more or less vital points. Concerning the all-important question of prices and their effect upon industrial earnings, some anticipate declines during the year, believing that the exchange situation will shut off the export outlet of great quantities of goods now stored in warehouses, and will cause a backing up of commodities upon the domestic market where the accumulated demand is nearly met by productive capacities expanded in excess of normal peacetime needs. Others point out that in order to save Europe from collapse huge additional credits must be ad-

vanced with government support or otherwise, which will operate to maintain exports, and to swell banking credits to further inflation with the inevitable result of still higher prices.

Still others predict the federal reserve board will be able to contract the over-extension of credits and bring about a gradual recession of prices by squeezing out the unhealthy inflation in commodity prices as it did in stocks in November. None yet, however, has been able to harmonize all of the conflicting factors and bring out of the mist of confusion a crystalized plausible picture of possible future developments. Two factors only stand out clearly. One of them, which is favorable, relates to the recognized worldwide shortage of necessary commodities and seems to insure unabated activity and prosperity for the great basic industries, such as building materials and steel for many months to come. The other on the opposite side of the picture relates to the world financial situation, now in an acute stage as a result of the stupendous heritage of debt from the war together with the amazing continued inflation of currency and banking credits. The unhealthy financial conditions in the United States are emphasized by the significant index of the low federal reserve ratio, while in Europe they are reflected by the demoralized exchanges.

Reaction Brings Extravagance

In both Europe and America during the first year of peace the populations suffering from what Theodore Price calls the anaesthesia of inflation, and what others describe as the natural reaction from the terrific strain of the war, have given way to an outburst of speculation, to unchecked extravagance, to pleasure-seeking, to idleness and to inefficiency, accompanied by incessant demands for higher wages, and finally in the closing months of the year to an eruption of unrest and radicalism which has shaken the very foundations of society and brought the most serious epidemic of strikes the world has ever seen. In its broad outlines this has been the history after every great war and the sequel always has been

eventually a corrective reaction.

The feeling generally prevails in this country that the federal reserve system stands as an unshakable barrier against all possible financial flurries. As a matter of fact the system does eliminate the old-fashioned money panic by insuring sufficient currency to liquidate bank deposits and also adequate credits to carry on essential business. Nevertheless the highest authorities agree that the federal reserve banks cannot go on indefinitely increasing the volume of credit. Nothing in the system is able to neutralize undue inflation of banking credit or the disturbance and anxiety which accompanies such a condition. Herein lies the great danger and one that may well be watched and studied by all who are dependent upon the banks for their current funds.

Instead of hoped-for deflation, the first year of peace has seen further inflation and an intensified strain on bank credits due to unrestrained stock market and commodity speculation, increased industrial costs resulting from higher inventories and advancing wages, and the existence of billions of outstanding Liberty bonds available for ready use as collateral for bank loans. Unmistakeable evidence of the expanded condition of credits is to be found in the fact that total discounts of the 12 regional banks grew from \$2,123,000,000 as of Nov. 1, 1918, to \$2,805,818,000 as of Jan. 2, 1919. This development was accompanied by a decline in the ratio of total cash to combined deposit and note liabilities to the record low point of 43.7 per cent. In practice this composite ratio is regarded as the index to the system's condition, but the legal reserve requirement of the federal reserve system is defined in the act as 40 per cent of gold to federal reserve notes outstanding after setting aside 35 per cent against net deposit liabilities. On Jan. 2 the gold reserve ratio had reached the extreme low record of 49.5 per cent. Although in a measure the fall of the ratio was due to the ordinary year-end requirements, in its broader sense it reflects the enormous burden resting upon the reserve banks. There is

nothing immediately alarming in the situation. The reserve requirement was fixed not to be considered as an evidence of calamity if reached but rather as a flag of warning that danger loomed ahead. It is a point beyond which banking credit should not be further expanded except with exceeding caution and care. Should the reserve ratio dip below the legal minimum, the result would be either a continued expansion due to suspension of reserve requirements, which is permitted in the reserve act, accompanied by a graduated tax upon the deficiency, or else a drastic curtailment of credit due to the enforcement of the reserve requirements and the consequent cutting off of relief for hard-pressed banks. Only in the most desperate circumstances would the latter remedy be employed.

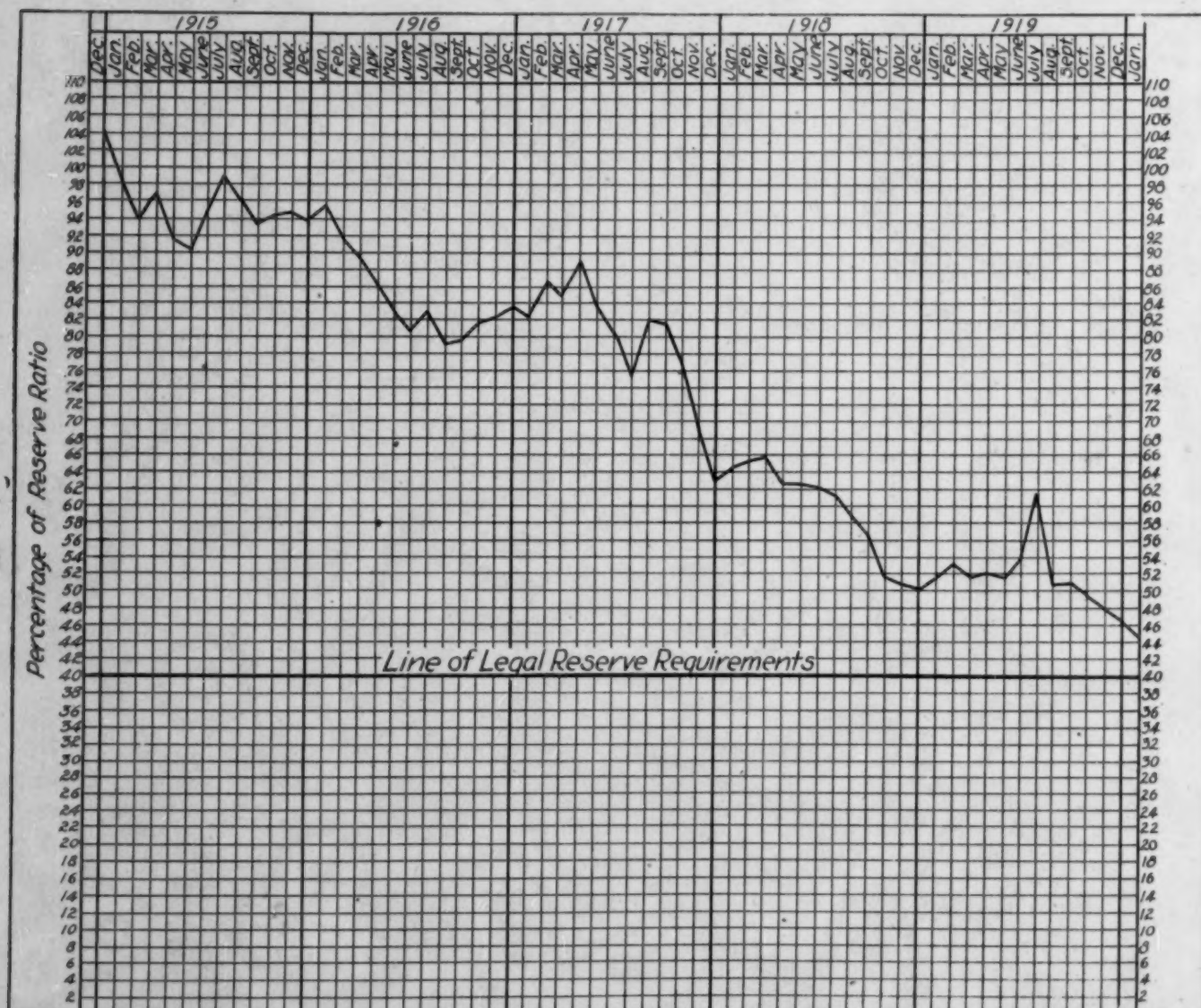
The underlying principle of the federal reserve system was to provide a liquid reservoir of credit available at all times for the emergency use of

member banks in financing legitimate current business transactions. It never was intended that the system should be loaned up to the limit of liquidity save in the most extreme exigencies. Neither were the resources of the system to be used for purposes of speculation nor for long-time financing. The war, however, affected the fundamental safeguards of the system. The necessity of admitting "war paper" as a basis for rediscounts in order to float the bond issues opened an immense floodgate through which the system's resources have gushed into feverish channels of speculation and senseless spending.

The public has depended upon the banks of the country to support a riot of chance-taking and rising prices, without increasing the actual production of wealth, and the banks in their turn have leaned heavily upon the federal reserve system. In order to bar an expansion of banking credits beyond the utmost line of discretion

and to protect legitimate and essential business from the inevitable pinch of such an eventuality, the federal reserve board has set itself resolutely to the task of correcting the evil symptoms which have combined to render the situation acute. Its plan of campaign has already been indicated in an advance of rediscount rates, aimed to induce liquidation of loans on Liberty bond collateral and to render less easy borrowing upon government securities.

The main efforts of the federal reserve board, however, are directed toward the far greater task of influencing member banks to exercise extreme discrimination in making further loans. Advances for purposes of speculation in real estate, stocks or commodities, for the expansion of nonessential or luxury enterprises, or for any purpose not considered vital to the legitimate needs of sound business, are frowned upon by the board. In view of the tremendous counter



THE INDEX OF THE FEDERAL RESERVE SYSTEM'S CONDITION, THE RATIO OF CASH AGAINST DEPOSITS AND NOTES COMBINED, IS FALLING—THE LEGAL RESERVE MINIMUM IS 40 PER CENT GOLD AGAINST NOTES

pressure placed upon banks by their borrowing customers it is recognized that the reserve system faces the most severe test of its history in its attempt to stop the gap of rapidly expanding bank credits. To accomplish its purpose the board has three weapons: moral suasion upon banks and education of the people; critical scrutinization of member banks' applications for rediscounts; and finally, as a last resort, additional advances in the rediscount rates. The system's machinery proved adequately elastic to permit the enormous inflation of the war period and the real test of its peace value will come in proving itself equal to the task of compelling the contraction of the swollen credit structure to more normal proportions. This will necessitate checking the flight of prices and diverting credits from nonessential and speculative channels to sound productive uses.

Federal reserve system authorities hope and believe these things can be accomplished by a gradual pressure. They believe that persuasion and education will suffice to get the country back upon a sober, balanced basis. In some high quarters, however, it is insisted that nothing less than a jolt to business and a period of labor liquidation will shock people to the realities of things and bring them to an appreciation of the value of money and of the necessity of working efficiently and spending wisely. The federal reserve board is endeavoring to ward off such a jar, however, by preventive means, believing that such a drastic remedy while probably effective would be worse than the disease. Gradual deflation and increased production, it believes, ultimately will bring about complete readjustment.

Great Demand is Unsatisfied

Even if as some maintain a financial curtailment is impending it is pointed out by others that the comeback of the basic industries—should they feel the effects at all—will be swift and sure. Many believe that the vast unsatisfied demand for iron and steel products in the world alone is sufficient to stimulate general activity for many months. For virtually four years the great producing nations of the world diverted their energies from peace production to the manufacture of implements of death and devastation. The end of the conflict found the world glutted with war tools but with an appalling shortage of commodities and of machinery for everyday peacetime consumption and employment.

Strikes and inefficient labor played

Two Sides to Story of 1920 Possibilities

TWO distinct pictures have been painted of the commercial possibilities of 1920—one by the pessimists and the other by the optimists. They comprise the generally recognized, outstanding favorable and unfavorable factors bearing on the future industrial situation. On the favorable side of the ledger there are: (1) Shortage of basic commodities; (2) enforced curtailment of iron and steel production; (3) intense building activity; (4) needs of railroads; (5) improvement in the labor situation; (6) labor savings inventions; (7) vast new wealth creation in oil well discoveries; (8) federal reserve board's policy in opposing further strain on banking credits; (9) diminished government borrowings and possibility of excess profits tax repeal.

On the unfavorable side there stand: (1) Acute world financial position; (2) demoralized exchanges and possibility of curtailed exports; (3) railroad financing difficulties; (4) over-expansion of many industries for peacetime needs; (5) widespread extravagance and speculation; (6) belief that public's investing power has been saturated; (7) reduction in buying power through strikes; (8) continued labor unrest unless prices decline; (9) the fact that 1920 is a presidential year and proverbially an "off" year in business.

an important part in keeping down the world's record of iron and steel production in the first year of peace. The blast furnaces of the United States turned out approximately 30,500,000 gross tons of pig iron, exclusive of charcoal iron, as compared with 38,422,175 tons in 1918, a loss of 8,672,000 tons. The year's production of finished steel is estimated at around 33,000,000 tons as compared with an actual output of 44,462,422 tons in 1918, a loss for the year of more than 11,000,000 gross tons. The steel and coal strikes resulted in an indicated loss in iron and steel production of not less than 2,500,000 to 3,000,000 tons considering the rate of output in effect prior to Sept. 22, and a potential loss that is incalculable.

This amazing curtailment came in the face of an enormous rising tide of demand for iron and steel in both domestic and foreign markets. Foreign shipments of American iron and steel up to Nov. 1 totaled 3,813,507

tons which compares with the previous peacetime high level of 2,947,596 tons for the full calendar year of 1912.

France Turns to Germany

A reduction in exports to Europe, as is indicated by the recent announcement of France that for her iron and steel imports she must turn to Germany from America and England where exchange rates make the prices in francs prohibitive, would not be immediately disturbing to American producers because of the great unsatisfied demands of other markets of the world and the vast requirements yet to be met in the domestic markets. A stupendous demand for iron and steel appears certain to come soon from the railroads the properties and equipment of which are run down sadly. It is estimated that millions of tons will be required in rails alone, while in the aggregate the roads must spend within the next three years a total of \$7,000,000,000 it is estimated before their holdings can be brought to a point of complete efficiency. The difficulty of financing these purchases presents a grave problem. Its solution now rests with the senate and house conferees who have in their hands the task of framing a railroad bill. It is unthinkable that congress will endeavor to settle the question of earning return and the labor issue in any other way than by establishing a basis of credit and by attracting investors to railroad securities.

The story of curtailed iron and steel production in this country is repeated in the 1919 records of England and France, where the products of the industry are urgently needed for purposes of reconstruction. British steel production is estimated at 8,000,000 tons for the year, a loss of nearly 1,500,000 tons from the record of 1918. The English molders' strike has only just been settled after causing months of idleness in many lines of industry. French productive records, though indefinite, indicate great curtailment likewise. Viewing the steel situation as a whole, as emphasized by the insistent demand regardless of prices, it is difficult not to concur in the recent statement of C. M. Schwab that there is steel business in sight for the next two or three years.

The outlook is more promising when it is considered that the labor situation has been improved by the events of the latter part of 1919, when radical labor leaders who sought to obtain control of the steel and coal industries discovered that American

public opinion would not brook any such tactics. In addition the rank and file of labor have been awakened from the dream that their best interests lie in following the prophets of unrest and of the slacking of work. The wholesale deportation of red agitators should further purge the air. The shortage of common labor is hampering the steel industry, but gradually this should be overcome by labor-saving inventions and the increase in immigration.

Europe is Big Factor

Any analysis of the situation in this country would be incomplete without taking into consideration what is happening in Europe. The war destroyed America's splendid isolation, and her prosperity and the safety of her institutions depend in large measure upon the prosperity of Europe and its social and financial stability. It is difficult to form a satisfactory opinion respecting the exact status of the former belligerents because of the many conflicting reports emanating from various sources.

Apparently, however, some progress has been made toward fundamental improvement. In England the labor crisis has subsided, industry reviving while exports are growing steadily. Belgium is reported to have witnessed a remarkable recovery in manufacturing, while defeated Germany appears to have set philosophically to work with customary resourcefulness and method. The French government soon is to exercise a firm hand in its efforts to check the postwar spree of extravagance and to bring the people face to face with the cold, unescapable fact that the war debt must be paid by hard work and economical living. It promises to increase taxes drastically, to lay a heavy repressive hand upon luxuries and to halt forthwith the whirring paper-money printing presses.

An illuminating commentary upon the European situation is to be found in a recent statement by Herbert Hoover, whose great work as food administrator abroad following the signing of the armistice places him in the foremost rank of authorities upon this vital subject. Mr. Hoover takes direct issue with those European propagandists, headed by Sir George Paish, the famous British economist, now in this country, who have been loudly predicting an international financial catastrophe unless America comes to the aid of Europe with billions of additional credit. Sir George has advocated an advance of \$4,000,000,000 to \$8,000,000,000 to England in order to support a loan that country

has made to continental Europe, but the British treasury has repudiated the idea and declares Paish is not its representative on his present visit to America. Mr. Hoover contends that Europe's condition is improving and it is such that America need go no further than defer collection of interest on the existing huge debt, ratify the treaty and extend some secondary help to certain starving cities in Europe. Beyond this he says ordinary commercial credits will suffice.

Bankruptcy even is predicted for England by Sir Oswald Stoll, another English financial authority, who charges that the "crisis is foreshadowed by the gaming spirit which has supplanted business enterprise and this spirit always ends in a crash." Europe now owes the United States \$14,000,000,000, of which \$10,000,000,000 represent government advances. Washington's policy has been stated as opposed to further government participation in foreign loans but the recent plea of Secretary Glass for \$200,000,000 of credits to feed central Europe and for the suspension of interest collection on the foreign loan for two years, indicate that exceptions would be made if the emergency should become overwhelmingly threatening. Although the Edge law, which was recently enacted, is designed to facilitate export financing and in addition there is available nearly \$1,000,000,000 for loans to exporters of War Finance Corp. funds, many financiers believe that the government will be forced to lend a hand to needy Europe. This is because of the reluctance of American investors to place their funds in foreign securities. Foreign loans floated publicly in the United States last year aggregated \$473,600,000. In the latter part of the year the investment market gave evidence of inability to assimilate further extensive offerings. The fact that, in addition to the foreign securities, American investors were offered the stupendous total of \$2,718,000,000 in newly issued industrial securities, may indicate the point of saturation in investing power is nearly reached. Large expansions, need for more working capital because of the greater cost of doing business and necessity of providing for the excess profits tax have combined to swell the aggregate of new American issues.

Ample reason for the demoralization of European exchanges ranging from a 20 per cent discount in the United States on pound sterling to 91 per cent discount on the German mark is to be found in the trade balance piled up against Europe in

this country since 1914 of more than \$17,000,000,000. But there is more than this behind the fall in exchanges. An equally important factor is the astounding internal depreciation of the respective national currencies due to incomprehensible inflation and huge debts which have served to undermine national credits. It is estimated that Europe owes \$290,000,000,000 in paper circulation and funded debts against which she has a gold reserve of \$5,500,000,000 or little more than 2 per cent. Until all Europe vigorously attacks the appalling task of liquidating the debt of the war and of deflating the tremendous currency and credit expansion there can be little hope for betterment in the exchanges. By increasing exports to the United States and curtailing imports Europe of course could help improve the position of exchanges. Little headway was made in this direction in 1919, however.

Last year imports to this country from Europe were 12 per cent of exports to Europe, compared with 8 per cent in 1918 and 59 per cent before the war. It is an encouraging sign, however, that in November, the last month reported, the ratio had grown to 22 per cent. Of the gain in total American imports in 1919 only 28 per cent was from Europe, while of the growth in total exports, 70 per cent represented increased sales to Europe. It is significant, however, that France, England and Italy purchased but 6 per cent more than in 1918 while the neutrals, where exchanges are less unfavorable, bought 400 per cent more goods in this country. But the exchange pinch is beginning to be felt even in the neutral countries and everything points to the latter turning to Germany and other European countries as soon as their acute accumulated needs are satisfied and their neighboring countries are more able to take care of their normal requirements.

U. S. Exports Large

The total foreign trade of the United States in 1919 is estimated at nearly \$12,000,000,000, with exports of \$8,000,000,000 and imports half as much. The ability of this country to maintain its high rate of exports is doubted in many quarters. Although exports for the year broke all records and November was the second highest month in history, recent weeks have seen buying for foreign account fall off tremendously.

Although the probable turn of affairs in the future is anyone's guess, it appears from a broad survey that the financial and market prospects for

the basic commodities are bright while those for nonessential or over-expanded industries are less so. On the whole, however, as aptly stated by one authority, "the fulfillment of any pre-

dition which may be made is likely to depend on the question whether the first twelvemonth of returning peace was merely a confused transition period in which the influences

of actual wartime, though still seemingly paramount, were being steadily removed; or whether the tendencies displayed in 1919 have indicated a permanent trend of events."

Keeping a Perpetual Stock Inventory

BY A. STANLEY KEAST

THE modern foundry organization finds it essential that a record be kept of the amount and price of the stock of raw materials, such as pig iron, scrap, coke and coal, on hand. The man who calculates the cupola mixtures needs this information in order to determine what kind of metal to use; the purchasing agent must keep informed regarding the amounts of the different kinds of material which are on hand, in order to determine when to place his orders, and the cost clerk must know the price of the stock being used when making his cost estimates. To furnish this information a simple accurate record, preferably a perpetual inventory should be kept.

Among my duties as consumption and production clerk in a large iron and steel foundry, it developed upon me to devise an inexpensive method for keeping such a record. A method was evolved which does not require the expense of printed forms. An index such as is shown in Fig. 2 is made out on the typewriter. Then a number of sheets, such as are shown in Figs. 1 and 2, are ruled on plain paper. Two of these sheets will serve for keeping the record of one kind of material for a year. After the inventory the amount

of material on hand is recorded on the sheets and each month the amount used is added and the amount received subtracted in one column, while in two other columns the price per ton and the total value of material on hand are tabulated. The method may be clearly seen by studying Fig. 1 which shows a sheet of the coke record and Fig. 3 which illustrates the way the record is kept for pig iron. While this system is based on monthly balances, it can just as easily be adapted to weekly or even daily inventories if the information is wanted this close.

Furnishes Stock Check

This plan is now in successful operation at our foundry. Before it was adopted we frequently ran low in pig iron of certain grades, because we had no definite way to tell when to replenish our stock, and occasionally there was not as much iron on hand as we thought. Under the present system the purchasing agent has before him a record which tells how much metal of the various grades was used the month previous and how

much is on hand. Another advantage of keeping such a record lies in the fact that one is able to arrive at the exact cost per ton of the materials on hand, through the law of averages. Raw materials, particularly iron and steel, are changing in value frequently and it becomes essential for the cost clerk to know the average value of the stock on hand in order to figure production costs of iron in the ladle.

As an added advantage, a perpetual inventory of so simple a character as the one here presented, proves a very efficient check on the work of those entrusted with taking the annual inventory. Pig iron stocks are difficult to estimate even when the iron is piled pig upon pig. When, however, it lies scattered about the premises without regard for order, it is next to impossible to estimate with any degree of accuracy just what tonnage is on hand. In such cases the value of a perpetual inventory can hardly be overestimated. Coal and coke are equally as difficult to estimate in bulk, and where large stocks are maintained throughout the year, it is not unusual for a man taking stock account to be as much as a car out of the way, when his estimate is compared with the perpetual inventory.

Coke			
	Tonnage on hand	Price per ton	Total value
Inventory Jan. 1st, 1919	80.00	\$8.75	\$700.00
Received during Jan. 1919	95.00		\$831.25
Total for Jan. 1919	175.00	9.74	1692.25
Consumed during Jan. 1919	25.00	9.74	\$243.50
Balance on hand Feb. 1st, 1919	150.00	9.80	\$1470.00
Received during Feb. 1919	100.00		\$980.00
Total for Feb. 1919	250.00		\$2450.00

FIG. 1

INDEX	
Coke	Page 1
Buckhorn Coal	" 2
Broken Coal	" 3
Gas Coal	" 7
Sulphur Coal	" 8
Scrap	" 11
Marquette Scotch Pig Iron	" 12
Maple Plain No. 2	" 13
Maple No. 2 Charcoal	" 17
Richmond No. 4	" 18
Pine Lake No. 3 Charcoal	" 21

FIG. 2

Pine Lake No. 3 Charcoal Iron			
	Tonnage on hand	Price per ton	Total value
Inventory Jan. 1st, 1919	92.00	\$49.33	\$4540.00
None received during Jan.	92.00		
Total for Jan. 1919	92.00	49.33	4540.00
Consumed during Jan. 1919	7.10	49.33	\$350.33
Balance on hand Feb. 1st, 1919	84.90	49.33	\$4189.67
None received during Feb.	84.90		
Total for Feb. 1919	84.90	49.33	4189.67
Consumed during Feb. 1919	64.00	49.33	\$3163.33
Balance on hand Mar. 1st, 1919	20.90	49.33	\$1032.00

FIG. 3

AN INDEX OF THE DIFFERENT MATERIALS SHOWS THE NUMBER OF THE SHEET ON WHICH ANY CERTAIN MATERIAL IS RECORDED—THE SHEETS GIVE THE AMOUNT AND PRICE OF THE STOCK ON HAND

Luxemburg Is in Economic Flux

French, Belgium and German Steel Interests with Holdings in Grand Duchy Watch Outcome of Decision to Throw Economic Future with France—Combination Second to United States as Siderurgic Power

BY FRANCIS MILTOUN

French Correspondent of *The Iron Trade Review*

WITHOUT attempting to unscramble the omelette of economic, political and industrial ingredients as revealed by the historic past of Luxemburg, it is evident that the popular referendum of October, 1919, wherein the grand duchy is to throw in its economic future with that of France, overthrowing the Zollverein, is the principal plank of its political platform.

It is a question as to how much more favorably French interests in Luxemburg will be situated than they were before. It is axiom that one's interests lie in developing home industries and not in seeking investments in partnership with a foreign competitor. This is the flaw in the Franco-Luxemburg agreement for it concerns the metallurgical industry of Longwy, Briey and Thionville. Luxemburg's output in 1913, when everything was under German control was as follows: Pig iron, 2,547,861 tons; steel, 1,182,227; foundry castings, 26,513. The total value of the output was 163,359,611 francs. The production of raw steel was 1,128,791 tons, and was valued at 150,692,262 francs.

Luxemburg was the richest per capita country of Europe before the war, and doubtless is so today. The wealth per person at that time in Luxemburg was 12,000 francs; in Great Britain, 9720; France, 7500; and in Germany, 6440.

Luxemburg Wealthy in Minerals

The metallurgical production of Luxemburg, added to that of France, makes the combination the first siderurgic power of the globe after the United States. Geographically there is no question but that it forms a prolongation of the Lorraine mineral region, from whence Luxemburg metallurgists actually drew 50 per cent of their ore previous to the war. It looks like an ideal working partnership for France, but there are rumors and rumbles on all hands that the competition which will be developed will be of the two-edged sword variety, and type. Had Luxemburg voted for a republic, or even

that the grand duchy should remain and adopt an independent regime, French metallurgists would have if not the first at least the upper cut in the competitive blows.

Whether France is to replace entirely German interests in the grand duchy remains to be seen. Germany, by relationship with the young Grande Duchesse Charlotte, had made the duchy but a satellite of the empire. The principal railways of the little country were German, and the trunk

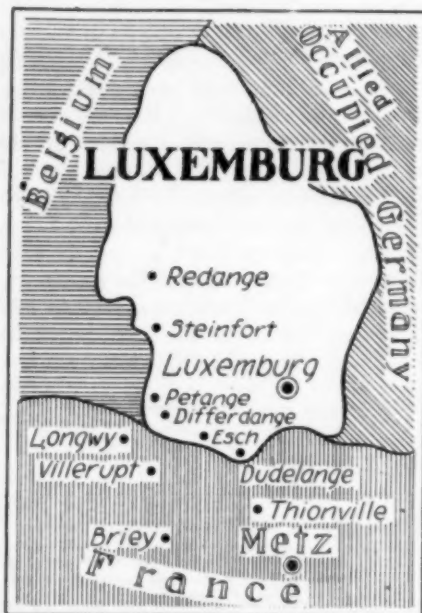
the imperial plants of Germany. In 1913 45 blast furnaces, six important steel plants and nine foundries were in operation. This industrial activity was largely due to German financial participation.

Insofar as German activity and financial aid in Luxemburg metallurgy made what prestige it could out of the association, there was ever a manifest undercurrent of sympathy for France and the French ideal. This existed in opposition to the country's "interests." French was spoken by far the greater part of the population and was increasing from year to year before the war in spite of German propaganda.

Commercial Exchanges in 1913

Luxemburg's business relations with French Lorraine acquired in 1913 about 1,128,100 tons of the phosphinette iron ores, and sent to France 375,400 tons of minerals extracted from her own soil. In no way, however, did these commercial exchanges in this specialty, nor in any other, equal those with Germany. To come over to France in a close "economic union" was tantamount to Luxemburg tearing up a treaty which had been profitable and which might be kept in force and taking on with another which had yet to be applied. There are those who think that the action was precipitate on both sides. Time only will work out the problem. Meantime there are still interwoven and very much tangled French-Belgian-German-Luxemburg metallurgical interests in the grand duchy.

There are many ore deposits in Luxemburg under French ownership. The Société Metallurgique de Gorcy owns the Tittelberg mine, M. de Saintignon that of Pétange and M. Brasseur, another at Rumelange, operated by a Belgian society. La Lorraine Industrielle, known in the district as Prince Henri, operates several open pits covering 125 acres. The Saulnes, Chiers and Villerupt companies also have working concessions in Luxemburg. In addition, French capital is heavily interested in several important Belgian companies.



LUXEMBURG IS NEAR CENTER OF FRENCH IRON INDUSTRY

lines to Thionville, to Treves and to Arlon were, as afterwards proved, merely strategies for the quick moving of German troops across the country should occasion ever arise. Finally the Luxemburg customs were incorporated in the same manner that the diverse monarchies of the Reich were incorporated into a species of Prussian vassalage.

In return Luxemburg did receive certain advantages which were not negligible. With the assistance of the metallurgical industry of the Ruhr that of Luxemburg prospered greatly. Seventy-seven mining properties produced over 7,000,000,000 tons of ore of which more than half was sold to

Among the Belgian companies working in Luxemburg are La Providence, and the Société du Hainaut, at Rumelange.

Lorraine Capital Invested

Large investments of Lorraine capital also are found in the Belgian-Luxemburg companies of Musson and Halanzy. The former has 82 acres of ore deposits at Differdange and the latter 92 acres at Esch and 52 acres at Kayl. Nearly 500,000 tons of ore are mined in Luxemburg annually by companies having French capital.

Compared with French interests before the war, those of Germany were far more important. Curiously there was little that was distinctively of Luxemburg parentage, or even guardianship. This was accounted for by Luxemburg's small area and its geographical situation, surrounded on all sides by larger nations. Germany made the most of this and insinuated herself and her interests everywhere.

The real German power in Luxemburg *metallurgiques* was the Deutsche Luxemburgische Bergwerks und Hutten Aktien Gesellschaft, of Bochum, the exploiter of the great Differdange steelplant. This most important of all Luxemburg steel interests is being stripped of its German owners by a Franco-Belgian association which has made an offer which the Germans find attractive. The transaction may not be completed for months, for there are many judicial and political questions involved. The company is a Luxemburg corporation, its principal shareholders being German.

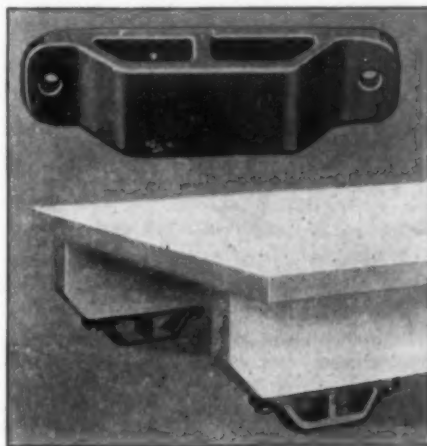
The plant of the Differdinger-Huttenwerke is situated between the Chiers and the railway from Esch to Pétange. Its equipment comprises eight blast furnaces, a steel plant with five converters of from 20 to 24 tons capacity and a series of rolling mills. It produced daily 1350 tons of pig iron which it worked into semi-finished products. During the war it ran nearly at full capacity, but shut down entirely in the summer of 1919, partly resuming during the prolonged period of negotiations as to its future. In September, 1919, it had a considerable stock ready for delivery in its warehouses.

Holdings of Other Companies

The Deutsch-Luxemburg mining properties comprise Thillenbourg, 160 acres; Oberkornberg, 50 acres; Langengrund, 90 acres, and Monceau-Grandbois-Rosenmuhle, 475 acres. Crossing the border into Lorraine, during the German occupation, the company worked deposits at Thion-

ville, Oettingen, and at Moutiers, in the Briey basin.

The Gelsenkirchen German combination had a large plant at Esch sur l'Alazette and at Belval. The owners of the Rumelange and St. Ingbert plant had entrusted the operation of the plant to the Deutsch-Luxemburg. The Eisen and Stahlwerk Steinfort was a German absorption of the former well known Luxemburg firm of Collart et Cie. The Deutsch-Luxemburg also operated the Rumelange plant in connection with that of Differdange, the latter having



THE CAST IRON FEET ARE BOLTED TO PLATFORM SKIDS

4000 workmen, and the former producing in two distinct localities with a like number. Rumelange had three blast furnaces in Luxemburg proper, and three at Ottange. Mineral deposits contributory to these plants were at Hutberg, Muhlenberg, Differdange and Heidenfeldchen in Luxemburg.

Belgian capital is solely interested in Rodange, it being a *filiale* of the Ougree-Marihaye Co., at Seraing. It employs 1000 workmen and has five blast furnaces. There also is the Union des Acieries, essentially Luxemburgois, with no outside financial participation.

Two-thirds of the capital of the German Steinfort and Burbach-Eich-Dudelage companies was Luxemburgois the remainder of the shares belonging to Germans, French and Belgians. From this one example alone it is seen how complicated is the situation of the Luxemburg iron and steel industry, and how difficult it is to establish ownership under Luxemburg laws.

The daily production of iron and steel attributed to Luxemburg is approximately 1500 tons; that of France not more than 230 tons; Germany had to its credit 3000 tons for Gelsenkirchen; 1000 tons for Differdange;

500 tons for Rumelange; 100 tons for Steinfort and 230 tons for Burbach. This last comparison shows that on a basis of capital invested, Germany was producing thrice the amount of iron and steel produced by Luxemburg capital, six times that produced by Belgian capital and 20 times that to the credit of French capital.

Such was the status in 1919, and there has been little change save toward a disintegration among the German companies with a view to a change or fusion of ownership. In addition to the possible French acquisitions mentioned, French interests are negotiating with the Gelsenkirchen to take over its establishments at Audun le Tiche and Aix la Chapelle.

British Capture German Trade in England

The war gave great impetus to the manufacture of drop forgings and stampings in Great Britain, and since the armistice the additional machinery installed has been in constant use. One of the largest concerns which has its headquarters in Birmingham, and which has works at Walsall and Coventry, is Thomas Smith's Stamping Works, Ltd. At the recent annual meeting a dividend of 20 per cent was declared, with a further semiannual dividend of 10 per cent or the current year. A large sum was placed in reserve.

The chairman reported that demand is "simply stupendous," necessitating large additions to the plant at Coventry, while at Walsall the firm has captured the business of rolling light sections used by the sash and casement trade previously dominated in Great Britain by the Germans. In view of the enormous demand for housing, large extensions have been planned for increased business. The chairman mentioned that Charles A. Clarke, the firm's managing director, is chairman of the Drop Forgings association, and also is a member of the executive committee of the Federation of British Industries, whose plans are expected to assist in fostering British trade throughout the world.

Feet Prevent Skid Wear

Cast iron feet have been designed by the Cowan Truck Co., Holyoke, Mass., to reduce the wear on the runners of wooden platforms or skids used in connection with elevating trucks. The most common type of platform is of wood and the runners wear so rapidly that in a short time the height of the plat-

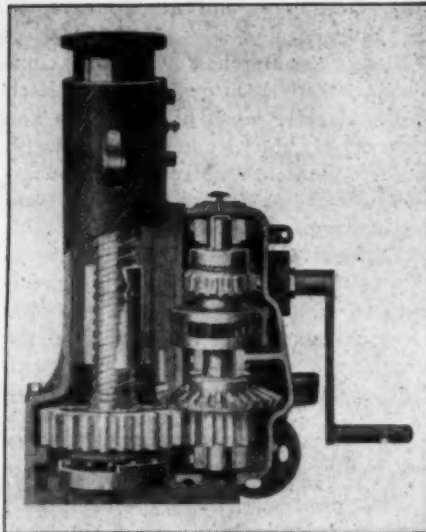
form is reduced so that the arms of the trucks will not run under it. The metal feet are bolted to the skids as shown in the accompanying illustration and take the wear caused by contact with the floor.

Exports Electrical Steel Mill Apparatus

Seventeen carloads of American-built electrical equipment for steel mill operation comprising what will be the first electrically-driven steel blooming mill in the Far East is now being delivered to the Imperial Steel Works located near Tokio, Japan. This equipment, which is to replace a steam engine operating a 40-inch reversing mill, is being furnished by the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

Capacity of the mill will be 50 tons per hour handling ingots measuring $19\frac{1}{2}$ inches square and weighing 6600 pounds normal to 11,000 pounds maximum. The mill will be operated by a 3500-horsepower single-unit motor of the reversing blooming mill type taking direct current at a voltage of 600, and running with a speed range of zero to 100 revolutions per minute. A flywheel motor generator set will supply power to the motor. The generator, which is of 600 volts, 368 revolutions per minute and 2800 kilowatt capacity, will be connected in series with the reversing motor and is designed to stand the same momentary current peaks as the reversing motor.

Drive for this generator is by a 2500-horsepower, 8-pole alternating current motor of the wound rotor induction type taking power at 3400



OPERATING MECHANISM IN NEW JACK DOES NOT RISE WITH LOAD

volts, 3 phase, 25 cycles and operating at a speed of 368 revolutions per minute. A slip regulator is used to control this set. A feature of the set is a 75,000-pound cast steel flywheel measuring 14 feet 9 inches in diameter.

Field excitation is supplied by a motor-driven exciter set consisting of one $32\frac{1}{2}$ -kilowatt, 125-volt constant potential exciter, only $12\frac{1}{2}$ -kilowatt, 125-volt variable potential exciter and a 70-horsepower, 3-phase, 25 cycle, 220-volt driving motor, all direct connected and mounted on a common bed plate.

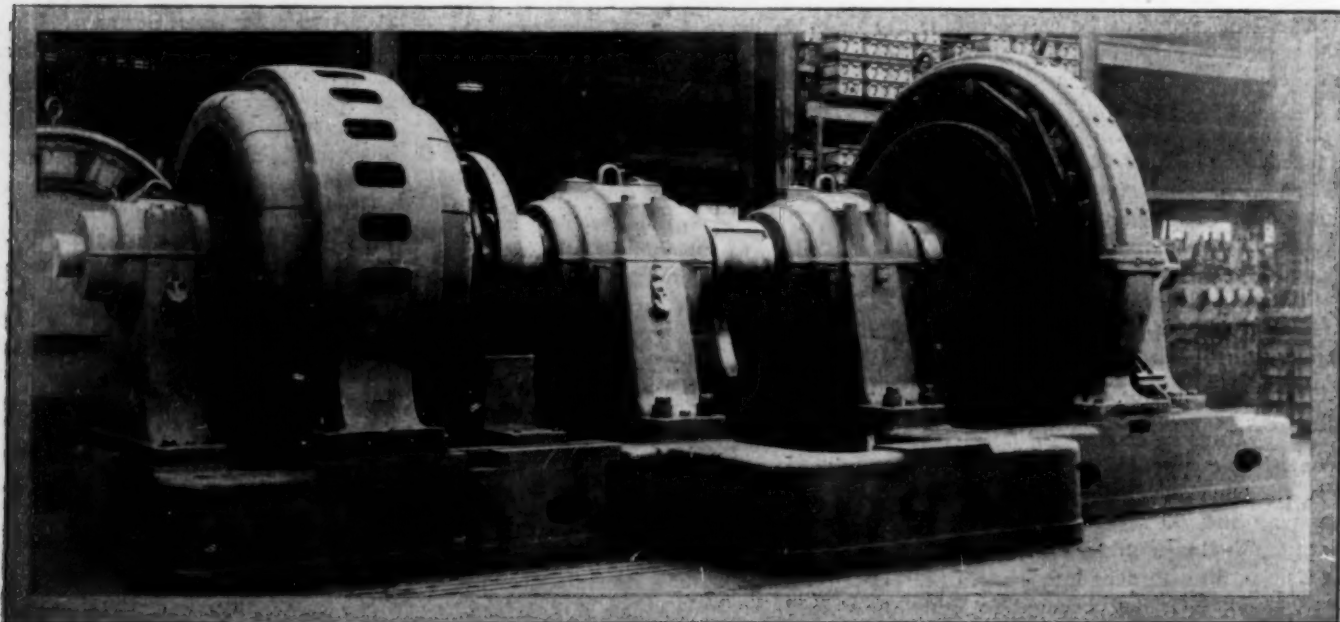
Accessories used with the equipment are a blower driven by a 40-horsepower, 3-phase, 25-cycle, 220-volt squirrel cage induction motor; an air washer to be used in connection with the blower; and a 125-kilovolt-ampere, 3400/220-volt, 3-phase,

25-cycle transformer connected high voltage side in star and low voltage side in delta, to supply power for the exciter set and blower motor. The remainder of the equipment comprises switchboard panels bearing instruments, switches, circuit breakers, shunts and relays for the control of motors, generators and feeders and disconnecting switches, oil circuit breakers and current transformers to be mounted on pipe framing.

Jack Operates From Base

A new 75-ton high-speed, ball bearing screw jack has been developed by the Duff Mfg. Co., Pittsburgh, for handling locomotives and other heavy equipment. The principal feature of the new tool is that the operating mechanism is located in the base instead of the head. As a result of this departure from conventional design, the greater weight is near the bottom and the point at which the operating lever is pivoted does not rise with the load.

The jack is operated by a 6-foot steel lever which actuates a double-thread screw through a ratchet and gearing, as shown in the accompanying illustration. The screw, which has a steep pitch, is made of heat-treated machine steel and turns in a bronze nut. A positive clutch holds the load when lifting or lowering. For lowering a crank handle is used as it gives more rapid operation. By inserting the operating lever into special sockets, the jack can be tipped over by one man and rolled around on the two wheels with which it is provided. The new jack is made in 20, 24 and 26-inch heights capable of maximum lifts of 6, 10 and 12 inches respectively.



AMERICAN MOTOR DRIVES FIND FAVOR IN JAPAN—FLYWHEEL MOTOR GENERATOR SET BUILT FOR IMPERIAL STEEL CO. BY WESTINGHOUSE ELECTRIC & MFG. CO. FLYWHEEL IS NOT ASSEMBLED IN THIS ILLUSTRATION

Organize Big Sintering Project

Company with \$3,000,000 Formed to Mine and Concentrate Low-grade Magnesite on Mesabi Range—Plant Now Being Built to Treat From 3000 to 4000 Tons of Ore a Day—Marks First Attempt to Commercialize Huge Deposits

DEFINITE plans of the promoters of what is known as the eastern Mesabi sintering project have been announced by Charles Hayden, of Hayden, Stone & Co., New York, following the organization of the Mesabi Iron Co., with a capital stock of \$3,000,000 for the mining and beneficiation of low-grade iron ore deposits on an extensive scale. Charles Hayden, financier, is chairman of the board, while Daniel C. Jackling is president. Among the directors are John D. Ryan, W. E. Corey, and Percy A. Rockefeller, as well as a number of experienced mining engineers.

As stated in the Jan. 1 issue of THE IRON TRADE REVIEW, the organizers of the company leased land six miles east of the Mesabi station on the Duluth & Iron Range railroad, the property extending in a northerly direction from this point and containing about 10 square miles. A new plant is being built near the station and will have a capacity for treating from 3000 to 4000 tons per day of magnetite-bearing rock. It is not expected that shipments will be made from this plant before the spring of 1921. Mr. Hayden's announcement follows:

"The recent formation of the Mesabi Iron Co. for the purpose of developing and working the low-grade iron deposits on the eastern portion of the Mesabi range is of unusual interest in that it is the first step taken in this district, if not in the United States, to commercialize iron-bearing material of this kind, and promises to be the most extensive operation in the country of this nature.

"As early as 1913, the attention of Hayden, Stone & Co. was called to these low-grade magnetite deposits, which upon investigation, were found to involve problems of mining and metallurgy similar in many essential respects to those pertaining to the 'porphyry coppers,' with the development and operation of which that firm had been and still is prominently identified.

\$750,000 Spent in Investigation

"Preliminary investigations and negotiations including the acquisition and control of a large and favorably located area covered a period of about two years extending into 1915, in which year, a small syndicate was organized by Hayden, Stone & Co. to drill and otherwise develop a portion of the areas that had been acquired and to continue metallurgical

investigation upon a more elaborate scale.

"A concentrating mill of 100 tons daily capacity of raw material was constructed at Duluth. It was completed about the middle of the year 1916, and was operated more or less continuously until the close of the year 1918 in the production of commercial products on a scale which resulted in the treatment of a great many, thousand tons of material from various parts of the eastern Mesabi deposits, and the production and sale of several thousand tons of high-grade iron concentrates and sinter, which has proved satisfactory in standard blast furnace practice.

"The expenditures of the syndicate in carrying out the foregoing amounted to approximately \$750,000. The results of this work were so satisfactory and pointed so conclusively to the commercial practicability of the enterprise, that Hayden, Stone & Co. have recently organized a corporation known as Mesabi Iron Co. to replace the original syndicate as a more adaptable vehicle through which to develop, equip and operate these properties in a larger and more comprehensive way.

"The capital stock of the Mesabi Iron Co. now being issued consists of \$3,000,000 of 8 per cent cumulative convertible preferred stock, the shares of which are of \$100 par value, and 150,000 common shares of no par value. As all of the securities are being issued to the original syndicate members and their associates, no public offering or flotation will be made or is contemplated until such time as the commercial plant which is now being built is in actual operation in the production and sale of a commercial product.

"The new plant which is being built near the mines on a branch of the Duluth & Iron Range railroad, will have an initial capacity for treating some 3000 to 4000 tons per day of low-grade magnetite bearing rock. It is not expected that the construction of this plant can be finished until toward the end of 1920, and accordingly, its product will not be on the market much, if any, before the beginning of 1921. This product will be in the form of agglomerated or sintered magnetite concentrate, containing upwards of 60 per cent iron, low in phosphorus and with practically no moisture.

"The quantity of raw material controlled by the company, the commercial and competitive value of which has been satisfactorily proven, may be described as practically unlimited, at least from the viewpoint of the succeeding generation.

"The investigation, acquisition and development of this property and enterprise has been directed by Daniel C. Jackling, who will continue to supervise the company's business and operations as its president. Dwight E. Woodbridge has been associated with the en-

terprise since its earliest inception and has had much to do with the field work of investigating and acquiring the mining properties. W. G. Swart has had direct charge of the original syndicate's developments and metallurgical investigations, and will continue in that capacity with the new company, as the manager of its operations. Horace V. Winchell and Seeley W. Mudd, engineers, have been active in the syndicate's affairs and will continue so as directors of the new company. The directors and executive officers of the Mesabi Iron Co. are as follows: Charles Hayden, chairman of the board; Daniel C. Jackling, president; John D. Ryan, W. E. Corey, Percy A. Rockefeller, C. M. MacNeill, Sherwood Aldrich, W. Hinkle Smith, Alva C. Dinkey, Seeley W. Mudd, Horace V. Winchell, K. B. Babbitt, W. G. Swart, J. Carson Agnew."

To Handle Alloys

The Shawinigan Products Corp. has been organized to handle ferroalloys and Canadian carbide in the United States. The new company will be controlled by the Canada Carbide Co. interests. Julian C. Smith will be president and L. F. Loutrel, formerly manager of the ferroalloys department of Fairbanks, Morse & Co., and vice president of the Canada Carbide Sales Co., will be vice president and general manager of the new company. The remainder of the personnel will be largely the same as that of the old Canada Carbide Sales Co. Temporarily the new company will be located at 30 Church street, New York.

The carbide plants whose product will be sold in this country by the Shawinigan Products Co. are those of the Canada Carbide Co. at Shawinigan Falls, Canada, and at Meritton, Can. The company also will sell the products of the Shawinigan Electro Products Co., Baltimore, and the Southern Ferro Alloys Co., Chattanooga, Tenn.

State Sells Iron Works

Austin, Texas, Jan. 10.—The Texas Steel Co., Beaumont, has made a contract with the state of Texas for the purchase of the blast furnace, foundry and pipe works at Rusk, Tex. The consideration was \$112,500. The company owns extensive iron ore beds in Cass and other counties of northwestern Texas, within convenient shipping distance of the Rusk furnace.

Steel Exports Partially Recover

Slump of Two Previous Months Halted in November as Tonnage Turns Upward—
Pig Iron Gains and Semifinished Falls—Imports in Recovery Set
High Figure Since April 1917

AFTER showing consistent losses for two consecutive months, exports of iron and steel in November made a slight improvement, but the tonnage was still considerably behind the August and September figures. Imports made a small gain, overcoming the loss shown dur-

stantial gains were made in pig iron, scrap, steel rails, sheets and plates,

ished products, structural iron and steel, and both barbed and common wire. It is interesting to note that the improvement in pig iron was a few tons less than the loss in semifinished material.

Total imports were 43,826 tons, a gain of 3128 tons over the October

EXPORTS PIG IRON AND SEMI-FINISHED (Gross Tons)

1916—	Pig Iron	Semi-finished material
January	10,310	55,315
February	15,061	87,406
March	10,439	107,675
April	18,518	88,764
May	28,293	142,782
June	48,770	116,316
July	28,718	135,827
August	60,264	160,921
September	64,122	163,104
October	92,756	162,669
November	106,781	120,883
December	105,195	162,901
Total	607,236	1,504,563
1917—		
January	60,146	183,656
February	49,018	131,566
March	69,629	193,469
April	44,783	162,209
May	61,112	168,158
June	83,406	190,907
July	32,305	106,085
August	62,083	170,503
September	44,287	148,932
October	47,115	209,667
November	25,733	150,120
December	67,593	203,085
Total	656,210	2,018,357
1918—		
January	20,581	195,385
February	10,540	173,272
March	9,849	144,443
April	11,282	177,128
May	22,567	159,299
June	22,896	139,377
July	20,265	139,812
August	26,028	189,851
September	34,494	135,450
October	35,452	125,023
November	30,825	150,024
December	24,577	63,890
Total	269,356	1,792,754
1919—		
January	36,757	11,594
February	20,840	10,407
March	22,158	8,176
April	17,098	11,488
May	37,087	20,771
June	39,758	46,016
July	42,327	21,318
August	36,071	36,162
September	19,991	37,513
October	14,108	20,713
November	21,420	13,211
Total 11 months	306,564	237,369

ing the previous month and setting a total which was the highest since April, 1917.

Exports during November totaled 336,994 gross tons, a gain of 34,535 tons over the October total of 302,459 tons. The increase represented an improvement of 11.4 per cent in comparison to the 16.8 per cent decrease of the previous month. Sub-

IRON ORE IMPORTS (Gross Tons)

From	November		11 months ending November	
	1919	1918	1919	1918
Spain	8,046	61,260	23,609	
Sweden		61,540		
Canada	1,076	16,390	12,343	111,095
Cuba	78,450	50,180	277,255	622,594
Other countries	10,407	82	11,109	1,287
Total	89,933	74,698	423,507	758,585

IMPORTS VARIOUS ORES AND FERROALLOYS (Gross Tons)

	November		11 months ending November	
	1919	1918	1919	1918
Ferromanganese	6,921	520	29,595	26,991
Ferrosilicon	1,388	1,467	8,623	4,077
Manganese ore	11,694	38,580	296,968	469,879
Tungsten-bearing ore	1,423	2,311	7,858	9,332
Nickel ore	1,853	4,675	20,525	56,060
Total	23,279	47,553	363,569	596,339

IRON AND STEEL EXPORTS (Gross Tons)

	November		11 months ending November	
	1919	1918	1919	1918
Pig iron	21,429	30,825	306,649	244,950
Scrap	6,289	7	23,303	2,129
Steel billets, ing. & bl'ns.	13,211	149,924	236,886	1,732,299
Wire rods	8,504	13,028	111,098	136,745
Steel rails	54,342	34,212	618,300	468,584
Steel bars	46,644	37,177	523,632	540,068
Iron bars	2,987	7,456	58,734	53,193
Struct. iron and steel	22,939	16,262	345,177	204,669
Hoops, bands and scroll	2,811	4,915	47,084	46,830
Sheets & plates	87,278	72,222	518,993	746,329
Ship and tank plates, punched and shaped	1,711	2,972	12,905	28,145
Tin and terne plate	18,938	17,825	189,148	243,925
Barbed wire	8,661	14,259	91,307	231,061
All oth. wire	11,783	12,837	182,238	145,351
Cut nails	160	219	2,838	3,572
Wire nails	4,724	8,858	86,482	72,980
All other nails incl. tacks	769	1,028	15,430	10,835
Pipes and fit'gs	20,131	10,038	259,628	136,211
R. R. spikes	1,046	865	23,849	9,207
Bolts, nuts, rivets and wash.	2,223	2,878	37,392	25,099
Horseshoes	163	78	3,116	2,757
Cast radiators	251	383	4,020	2,396
Total	336,994	439,268	3,698,209	5,017,339

IRON AND STEEL IMPORTS (Gross Tons)

	November		11 months ending November	
	1919	1918	1919	1918
Pig iron	22,883	1,987	89,888	33,041
Scrap	15,175	2,880	157,075	43,426
Bar iron	220	136	1,574	1,421
Ingot, blooms and billets	4,055	4,249	11,754	37,436
Structural shapes	107	798	958	3,392
Rolls	480	68	15,736	6,830
Sheets and plates	243	102	1,005	1,635
Tin and terne plate	73		224	32
Tin scrap	497	492	4,967	5,944
Wire rods	33	617	234	7,851
Total	43,826	11,329	282,415	141,008

and tin and terne plate while noticeable losses were made in semifin-

IMPORTS AND EXPORTS (Gross Tons)

1916	Imports	Exports
January	15,824	360,102
February	20,279	368,980
March	15,159	438,649
April	20,170	384,452
May	32,114	538,657
June	26,885	515,214
July	14,774	502,330
August	23,255	571,401
September	25,550	643,762
October	30,169	588,892
November	42,545	554,219
December	44,134	580,988
Total	310,891	5,947,646
1917—		
January	40,910	608,281
February	24,947	449,099
March	37,943	606,559
April	48,213	519,397
May	26,479	582,303
June	20,080	629,305
July	28,859	346,393
August	26,129	503,075
September	19,058	499,067
October	14,310	571,868
November	13,995	473,549
December	14,642	653,344
Total	324,565	6,442,240
1918—		
January	12,475	490,259
February	12,941	438,848
March	14,345	379,924
April	11,371	462,887
May	14,387	488,515
June	13,913	418,605
July	11,511	452,759
August	12,520	512,104
September	8,440	473,688
October	15,744	426,767
November	11,582	471,427
December	28,996	356,641
Total	168,225	5,372,424
1919—		
January	16,913	371,570
February	12,302	344,180
March	17,632	367,224
April	16,560	396,813
May	17,885	422,282
June	21,056	561,020
July	28,258	287,685
August	28,987	396,743
September	43,567	363,531
October	40,698	302,459
November	43,826	336,994
Total 11 months	287,684	4,150,501

total of 40,698 tons. This was an increase of 7.7 per cent. A heavy loss in scrap was overcome by increased tonnages in pig iron and semifinished materials.

Iron ore imports with a total of 89,933 tons practically tripled themselves over the total of 30,386 tons received in October. Increased shipments from Cuba largely were responsible.

Ask For Bonuses

Canadian Shipbuilders Say Government Must Help Industry

Toronto, Ont., Jan. 10.—Representatives of 17 shipbuilding companies called on officials of Canadian government at Ottawa, Jan. 7 to urge the necessity of constructing more ships and to ask for government assistance. They requested that for a term of 10 years the government grant a bonus of \$10 per displacement ton, and \$10 per indicated horsepower for steel ships completed after April 1, 1920. It was stated that without this assistance existing plants cannot be continuously employed, and that large numbers of men will be thrown out of employment.

Sir George Foster, minister of trade and commerce, promised that the government will give the matter earnest consideration. The shipbuilders will have another conference with members of the cabinet.

So far contracts have been let by the government for 60 steel vessels, over 20 of which are now in commission. Of the total appropriations for shipbuilding, amounting to about \$75,000,000, \$59,000,000 has been expended. At the time the armistice was declared that contract price was \$199.50 per ton, but it has since dropped to \$176. It is anticipated that after the appropriation has been exhausted no more contracts will be let and that if any encouragement is given to the industry it will be by means of bonuses.

At the annual meeting of the Dominion Steel Corp. in Montreal, Jan. 9, J. K. L. Ross resigned as a director. The vacancy was not filled. The directors confirmed the appointment of the following to the newly organized London advisory committee of the corporation: Viscount Furness, Sir William Beardmore, Sir Newton Moore, Henry Steel, Benjamin Ta'bot and Col. W. Grant Morden. All are associated with the British interests who recently acquired 50,000 shares of the corporation's common stock.

Steel Plant in Louisiana to Use Texas Ore

Linden, Tex., Jan. 10.—The Louisiana Steel Co. has been incorporated with a capital of \$10,000,000, one of its purposes being to develop extensive beds of iron ore in Cass, Morris and Marion counties, near Linden, Tex., and to construct and operate a large iron and steel plant near

Shreveport, La. The directors of the new corporation are Fox Winnie, Newton, Kans.; James Niblett, Hughes Springs, Tex., and Col. L. P. Featherstone, Beaumont, Tex. Colonel Featherstone is head of the Texas Steel Co., which owns large beds of iron ore in this section. Listed among the properties held by the Louisiana Steel Co. are 7036 acres of land, estimated to contain 27,000,000 tons of iron ore. The property was taken by the company in payment for stock valued at \$5,000,000.

Cambria to Begin Work on Large Addition

As part of its construction program, involving total expenditures of about \$15,000,000, the Cambria Steel Co., at Johnstown, Pa., will build two central power plants at a cost of approximately \$2,000,000. These power stations, which will be of the most improved type, will generate 12,000 horsepower and construction will begin immediately. One of the plants, which will be of 8000 horsepower capacity, will be located at the Franklin works of the company near the open-hearth plants, while the smaller unit, which is of 4000 horsepower capacity, will be erected at the Cambria works near the electric power plant.

The boilers and superheaters will be housed in fireproof buildings of brick and steel construction and are of the latest design of the Babcock & Wilcox Co., New York. The buildings will be so constructed that a large subway will extend the entire length. This will permit standard gage cars to be placed under the boilers and to take the ashes direct from the grates. The latter are of the nonlinkering type.

Construction of a plant for building tank cars at the Franklin works also has been authorized by the company. For this purpose, \$1,750,000 has been appropriated and the major portion of the tools and equipment already has been ordered. The plant will consist of three bays, each 225 feet long, riveting towers, die shops, rivet storage sheds and power houses.

Index Is Ready

The index to volume LXV, of The Iron Trade Review covering the last six months of 1919, now is ready for distribution. Copies will be sent to all subscribers who express their desire for them.

Unfilled Order Increase Greatest On Record

The largest increase in unfilled tonnage on the records of the United States Steel Corp. was made in December, when a gain of 1,037,036 tons was shown. According to the regular monthly report, unfilled bookings on Dec. 31 amounted to 8,256,366 tons, the highest figure reached since October, 1918, when the total ran up to 8,353,392 tons.

A comparative statement follows:

Date	Total	Change, tonnage	Change, per cent
Dec. 31, 1919....	8,256,366	1,137,036+	14.05+
Nov. 30, 1919....	7,128,330	655,662+	10.12+
Oct. 31, 1919....	6,472,668	188,030+	2.90+
Sept. 30, 1919....	6,284,638	175,535+	2.80+
Aug. 31, 1919....	6,109,103	530,442+	9.50+
July 31, 1919....	5,578,661	685,806+	14.00+
June 30, 1919....	4,892,855	610,545+	10.70+
May 31, 1919....	4,282,310	518,375-	10.80-
Apr. 30, 1919....	4,800,685	629,887-	11.58-
Mar. 31, 1919....	5,430,572	580,215-	0.65-
Feb. 28, 1919....	6,010,787	673,481-	10.07-
Jan. 31, 1919....	6,684,268	694,884-	9.41-
Dec. 31, 1918....	7,379,152	745,511-	9.17-
Nov. 30, 1918....	8,124,683	228,630-	2.74-
Oct. 31, 1918....	8,353,293	55,388+	.668+
Sep. 30, 1918....	8,297,905	461,137-	5.26-
Aug. 31, 1918....	8,759,043	124,759-	1.40-
July 31, 1918....	8,883,801	35,065-	.39-
June 30, 1918....	8,918,866	581,243+	6.90+
May 31, 1918....	8,337,623	404,250-	4.60-
Apr. 30, 1918....	8,741,882	314,522-	3.47-
Mar. 31, 1918....	9,009,675	232,049-	2.49-
Feb. 28, 1918....	9,288,453	189,400-	1.99-
Jan. 31, 1918....	9,477,853	96,135+	1.02+
Dec. 31, 1917....	9,381,718	484,612+	5.44+
Nov. 30, 1917....	8,897,106	112,569-	1.24-
Oct. 31, 1917....	9,009,675	823,802-	8.37-
Sep. 30, 1917....	9,833,477	573,572-	5.51-
Aug. 31, 1917....	10,407,049	453,115-	4.16-
July 31, 1917....	10,844,164	539,123-	4.74-
June 30, 1917....	11,383,287	503,304-	4.24-
May 31, 1917....	11,886,591	296,492-	2.43-
Apr. 30, 1917....	12,183,083	471,439+	4.02+
Mar. 31, 1917....	11,711,644	134,947+	1.16+
Feb. 28, 1917....	11,576,697	102,643+	0.90+
Jan. 31, 1917....	11,474,054	73,232-	0.64-
Dec. 31, 1916....	11,547,286	488,744+	4.43+
Nov. 30, 1916....	11,058,542	1,043,282+	10.41+
Oct. 31, 1916....	10,015,260	492,676+	5.18+
Sep. 30, 1916....	9,522,584	137,133-	1.42-
Aug. 31, 1916....	9,680,357	66,765+	.69+
July 31, 1916....	9,593,592	46,866-	0.48-
June 30, 1916....	9,640,458	297,340-	3.09-
May 31, 1916....	9,937,798	108,247+	1.11+
Apr. 30, 1916....	9,829,551	498,550+	5.34+

Williams Tool Co. Sold

Horace W. Davis & Co., New York, and a syndicate of New York and western Pennsylvania bankers have purchased the Williams Tool Co., of Erie, Pa. The new management plans virtually to double the company's capacity which it is said can be done with a comparatively small cash outlay. The company was formed in 1902 to manufacture the Williams pipe-threading machine. The authorized capitalization of the Williams Tool Co. will be \$300,000 8 per cent cumulative preferred stock, par \$100, and 300,000 shares of common stock, no par value, of which 20,000 shares will be issued. Of the common stock 6000 shares are reserved for conversion into preferred stock.

The New England Iron & Hardware association will hold its twenty-seventh annual banquet at Hotel Somerset, Boston, on Jan. 13.

Strike Failure Blow to Radicals

Conservative Element in Labor Federation Reported to Rejoice Secretly in Outcome of Attack on Steel Industry—Foster Resigns As Secretary of Organization Committee—Moral Support Sought For New "Campaign"

WASHINGTON, Jan. 13.—The "official" calling off of the steel strike, announced from Pittsburgh last Friday by the national committee, has left the impression here that the American Federation of Labor for some time has been encouraging this kind of action. Not only did it recognize from the outset apparently that the strike would prove abortive, despite its claims to the contrary, but, it will be recalled, the strike was not originally sponsored by the conservative element of the federation. Instead it was forced by the action of radicals, such as William Z. Foster. While they could not well say so publicly, it is confidently believed that the more important officials of the federation personally resented the action of Foster, John Fitzpatrick, chairman of the committee, and other extremists, whose attempt at leadership made the strike the source of public condemnation.

There is no doubt that some officials of the American Federation of Labor, President Samuel Gompers included, were apprehensive lest the radicals would succeed in their attempt to "bore from within" the organized labor movement and substitute their extreme theories and take over the organization. It apparently was because of this feeling that the federation approved of the steel strike and promised to give it "moral and financial support," realizing all the while it was without justification and could not be won. The steadfast position of the industry in refusing to yield to the radicals or to deal with them in any way, according to opinion here, has been the source of comfort to federation officials, because this gave to them a protection against the disturbers whom they feared.

Foster Resigns as Secretary

But with the strike declared off, they are said to feel comforted by the fact that they are again in firm control of the organized labor movement and have witnessed the collapse of the radicals, emphasized by the resignation of Foster as secretary-treasurer of the strike committee. His removal as a leader from organ-

ized labor unquestionably relieves the American Federation of Labor from considerable embarrassment which his activities have caused to the organ-

Chronology of the Steel Strike

SEPT. 22, 1919.—Strike begins, with these demands made by the American Federation of Labor's committee for organizing iron and steel workers:

Right of collective bargaining; reinstatement of all men discharged for union activities, with pay for time lost; the 8-hour day; abolition of 24-hour shifts; increase in wages sufficient to guarantee American standards of living; standard scales of wages for all crafts and classification of workers; double rates of pay for all overtime work; check-off system of collecting union dues; principles of seniority in working forces; abolition of company unions; abolition of physical examinations.

Sept. 24.—Senate subcommittee on education and labor begins investigation of strike.

Oct. 9.—Strike shows evidence of breaking up, thousands of men returning.

Oct. 20.—E. H. Gary, chairman of United States Steel Corp., reiterates to the President's first national industrial conference his refusal to arbitrate principle of open shop.

Oct. 21.—Strikers lose injunction suit for "right of free speech" in Pittsburgh district.

Nov. 4.—Amalgamated Association of Iron, Steel and Tin Workers withdrawing from strike; laborers only remaining out.

Nov. 11.—Senate subcommittee reports wages satisfactory and strike unjustified.

Jan. 8, 1920.—Strike formally called off. William Z. Foster, secretary of the organization committee, resigns.

Estimated loss in tonnage due to strike.—Between 2,000,000 and 3,000,000.

Estimate was that but one out of eight of the large number of men thrown out of employment during the course of the strike were strikers.

ization, and which were responsible for the criticism directed toward the federation by the senate committee on education and labor in its report on the investigation of the steel strike. Organized labor it seems likely is trying to retrace its steps of the past few months in order to recover as far as it can the standing it previously held with public officials and the people generally.

The calling off of the strike, it is said, has been quietly encouraged by federation officials with this end in view. More than this, it is observed that officials of the United Mine Workers by their action at Columbus, O., recently in connection with the calling off of the coal strike appeared to go out of their way to show an acquiescent attitude toward government officials and their ostensible desire not to cause the public any suffering but rather to invite its good opinion. In addition to this, the railroad brotherhoods and shopmen no longer are talking of striking but in place of carrying out a threat to do so to get higher wages, have announced their intention to co-operate with the farmers in an effort to bring down the cost of living for the public as well as themselves.

Planning New Drive

This move as well as the others mentioned, have led to speculation as to whether or not organized labor is endeavoring to regain moral support with a view to making a drive to accomplish certain purposes they have in view. The coal miners' officials, for instance, it is pointed out, are hoping to obtain more than a 14 per cent increase in wages from the President's coal commission. It is easily conceivable that they will get it, and that their sudden desire not to fight the government will be a great aid in this direction. The railroad brotherhoods, and for that matter, the entire organized labor movement, is bitterly opposed to the antistrike clause in the Cummins railroad bill, and their move, it is believed in some quarters, is designed as a device to get the favorable opinion of the public in an effort to have the clause killed, and perhaps to have the gov-

ernment continue control of the railroads for two years more, if they cannot force adoption of the Plumb plan. But the latter two attempts, it is generally conceded, are doomed to certain failure. The fact remains, however, that support of the campaign to have the government continue control of the railroads for two more years and even adopt a modified form of the Plumb plan is said to have come from some entirely unexpected quarters in return for bringing about a compromise between organized labor and these quarters referred to on vital questions at issue.

The newly announced policy of Glenn E. Plumb for a tripartite control of all American industry is not in itself taken seriously and probably is not meant to be so taken, but some think it is aimed as a sop at the public to force application of the program to control the railroads, whereby labor would share in the profits but not the losses. The advocacy by Director General Hines of a tripartite control of the railroads created something of a surprise, yet his proposal differs widely in fundamentals, from the Plumb plan.

The failure of the steel strike is considered generally to have given a definite setback to organized labor, and to have proved a fatal blow to the radicals. There is some question as to whether Foster's resignation was demanded by Mr. Gompers.

Sheet Workers' Wages Unchanged

Wages of sheet and tin mill workmen will remain unchanged, during January and February, in accordance with an agreement between repre-

sentatives of manufacturers and the Amalgamated Association of Iron, Steel and Tin Workers in Youngstown, O., Jan. 10, under the sliding scale arrangement. This is said to be due to the fact that deliveries during the past two months were on contracts existing before the previous settlement, Nov. 11. The following gives the percentage of wage changes since Jan. 1, 1919:

January-February, 1920 ...	4.35	Unchanged
November-December	4.35	Unchanged
September-October	4.35	Unchanged
July-August	4.35	- 4½ per cent
May-June	4.50	-10 per cent
March-April	4.90	-10½ per cent
January-February, 1919 ...	5.25	+ 7 per cent

Million Aliens Have Left Since War Ended

Nearly 1,000,000 foreign-born laborers have left the United States for Europe since the armistice was signed, and 1,000,000 more will depart as soon as passport regulations are made less strict, according to a statement issued by the Inter-Racial council of New York. The council reports that "tens of thousands of aliens are giving up their jobs preparatory to returning to their home lands and many of these, as the result of racial prejudices, will take back with them stories of America which will make this country less attractive to immigrants."

The independence that has been granted the countries of Europe, says the statement, and the fact that 30,000,000 persons, mostly women, are obtaining pensions from the governments are factors which detract from the incentive for foreigners to seek their fortunes in the United States.

An educational campaign among 30 nationalities in this country has been undertaken by the council.

British Leaders Fighting Unauthorized Strikes

Trade union leaders in England are making efforts to prevent unauthorized strikes, and with that object in view the London district committee of the National Federation of General Workers recently outlined a plan for approval by the federation. According to this plan "no district committee shall have power to sanction a strike without the consent of the committee of each of the affiliated unions and endorsement of the executive council of the federation." A number of labor leaders in parliament are said to be in favor of the movement.

The national federation, which includes seven trade unions comprising a membership of 2,000,000 workers, is striving to work out a policy for obtaining more co-operation between the men of the various crafts, so that the full force of numbers shall be brought to bear in case of an extensive strike. The London committee also proposed to make it the duty of a district committee to consult with the executive council on any question referred to it by the council in connection with disputes involving more than one affiliated union.

Average Wage Above \$25

The average weekly earnings of industrial workers in New York state passed the \$25 mark in November, according to a report by the state industrial commission. This is 100 per cent higher than the average for June, 1914. The November weekly average was \$25.37, which is 96 cents, or 4 per cent, above the October average.

Plant Roads Given Freight Allowance

WASHINGTON, Jan. 13.—Reversing its previous finding, the interstate commerce commission has handed down a decision that the Lake Terminal railroad, owned by the National Tube Co., hitherto held to be a mere plant facility, is a common carrier and consequently is entitled to switching allowances or divisions out of joint rates not exceeding 10 cents per ton. As a result of this report, it is believed, steel companies will derive millions of dollars in revenue which has been going to trunk carriers. The commission's original finding in the Lake Terminal case was that the service performed by that

line for the National Tube Co. to and from Lorain, O., was a plant and not a common carrier service. For that reason the commission denied reparation on shipments moving between April 1, 1914, and April 14, 1915. This reparation, which was refused, now has been ordered paid. The commission said the divisions or allowances should not exceed the amounts named in the tariffs of the Lake Terminal as local rates for the same service, which in 1917 were 8 cents per ton. Because of this the demand for reparation to 10 cents a ton was denied.

The big issue involved in the case, however, was whether or not the Lake

Terminal was a common carrier or a plant facility, as the commission had maintained. Its having finally been established as a common carrier means that many other lines operated by steel companies are expected to get a similar rating and be granted switching allowances or divisions out of joint rates, which they have not been obtaining on the ground that they were held to be plant facilities only. The Lake Terminal, after the first decision was made, went to court, as a result of which the commission was constrained to modify its original decision in the way pointed out.

Great quantities of ore and finished steel products were moved during the

period in 1914-15 when the trunk carriers treated the industrial lines as plant facilities at steel works, but now apparently they will have to be considered common carriers where they are open to public service. Some time ago the director general increased the allowance to the Newburgh & South Shore railroad, owned by the American Steel & Wire Co., in the Cleveland district.

Hardly had the Lake Terminal decision been handed down than the Gulf States Steel Co., Birmingham,

Ala., and other southern iron and steel companies filed complaint against the director general and trunk line roads performing the road haul service for them, seeking payment of compensation for terminal services by industrial lines. A rather unusual petition was made by the attorneys in their complaint in that they asked the commission to require the defendants to satisfy this complaint or answer it in a reasonable time, to be limited by the commission. They also asked for a finding as to the reasonable amounts

that should have been paid in the last two years for the work done by the complainants and declared that failure of the defendants to perform the interchange and spotting work has resulted and will result in unreasonable state and interstate rates. This is the first complaint that has been made in the industrial railroads' branch of the tap line case since the revival of that subject by protests that have been made by the United States Steel Corp., and other steel interests.

Basing Point Case Still Under Study

WASHINGTON, Jan. 12.—Careful consideration still is being given by the federal trade commission to the application of organized consumers in various districts for the issuance of a complaint against the Pittsburgh base on iron and steel products. It will probably be several weeks before a decision in this matter is announced.

A number of interesting points bearing upon the attack against the Pittsburgh base especially should the commission issue a complaint against this practice, are set forth in a summary of the case which has been prepared by Arthur J. Eddy, Chicago attorney who has been prominently identified with various association work in the iron and steel industry.

After covering the developments leading up to and covering the hearing, Mr. Eddy discusses the bearing of the Clayton and Federal Trade Commissions acts bearing upon the quotations at stake.

"At the close of the hearing the impression prevailed that the commission would probably issue a complaint," says Mr. Eddy. "The issuing of a complaint would not mean that the commission had decided that controversy one way or the other. It would simply mean that in the opinion of the commission sufficient facts had been developed to warrant a formal complaint and hearing thereon. If the commission issues its complaint, then the entire controversy will be open for the submission of such evidence as both sides wish to submit, and the making of such arguments as parties interested see fit to make.

"The effect of any order the commission may enter against Pittsburgh as a basing point for iron and steel products will be far-reaching. Basing points are used in other industries and any order the commission may enter in this particular controversy will have a direct bearing upon long established customs in a number of other industries. The commission ap-

pears to be fully aware of these facts, and to be disposed to hear not only producers and consumers of iron and steel products but producers and consumers in other lines where basing points are used. Until a complaint is issued in this particular controversy other industries need take no active steps, but the moment a complaint is issued it will be well for them to carefully consider the complaint and the effect of any suggested action on their own customs, and decide whether or not they should intervene.

"Assuming a complaint is issued and that the commission reaches the conclusion that the use of Pittsburgh as a basing point should be abandoned, the next question will be under what particular section of the federal trade commission act or the Clayton act, can the commission issue any order that would prove effective.

"So far as associations or combinations of producers are concerned they can be readily reached either by the commission or through the department of justice, and compelled to desist from any combined effort to establish either one or more basing points.

"So far as the individual manufacturer is concerned he has the right to sell his products for any price he pleases, and use any basing point he pleases, and this right (so far as the federal trade commission is concerned) is subject to only two qualifications:

"Under Section 5 of the Federal Trade Commission Act the individual may be prevented by the commission 'from using unfair methods of competition in commerce.'

"Under Section 2 of the Clayton act it is made unlawful for an individual 'either directly or indirectly to discriminate in price between different purchasers of commodities * * * where the effect of such discrimination may be to substantially lessen competition or tend to create a monopoly in any line of commerce,' but this section of the Clayton act also contains the very important proviso that discriminations in price in the same or different communities may be made in good faith to meet competition.

"It is fairly debatable and possibly doubtful, whether the commission un-

der these two sections could peremptorily order a manufacturer of steel in Chicago to discontinue quoting prices on the Pittsburgh base, or could order him to quote on a Chicago, Duluth, or any other particular base.

"The individual manufacturer located in the Chicago district may very well insist that quoting the Pittsburgh base could not possibly amount to unfair competition, and he may also very well and quite conclusively argue that Section 5 of the federal trade commission act does not extend any relief to buyers, but simply prohibits unfair competition in the interest of competitors who may suffer. Usually the buyer benefits, for the time being at least, by unfair and destructive competitive methods.

"It may be argued with more force that the use of the Pittsburgh base by the individual manufacturer amounts to a price discrimination but if so it is a discrimination (and this is the argument of the applications) in favor of Pittsburgh, but under Section 2 of the Clayton act any Chicago producer has the right to meet any prices he finds in Pittsburgh or any other locality, even though he charges a higher price at home. Furthermore, the asking of a lower price in Pittsburgh by a Chicago manufacturer can hardly 'substantially lessen competition or tend to create a monopoly' in either Pittsburgh or Chicago. And unless such discrimination tends to do one or both of those two things it is not prohibited by Section 2 of the Clayton act. Obviously the Chicago manufacturer—such as the Interstate Iron & Steel Co.—which asks a lower price in Pittsburgh, does so to meet competition in Pittsburgh, and thereby increases rather than lessens competition in that section; the same manufacturer who asks a higher price in Chicago cannot by so doing either lessen competition or tend to create a monopoly; on the contrary, by asking a higher price in Chicago he invites competition in the Chicago territory and actually foregoes any monopoly he might possess in the Chicago district on account of his location, if he sold f.o.b. his plant.

"In other words the interesting question is, whether Section 2 of the

Clayton act gives the commission power to order a manufacturer located in Chicago to sell his goods at the price he charges in Pittsburg, simply because he can do so and make money."

Coal Rates Advanced

Washington, Jan. 13.—Announcement has been made by the shipping board of an advance of 75 cents per ton in the coal rates from Hampton Roads, Va., and Baltimore to Boston and other New England ports effective Jan. 10. It is explained by the division of operations that this advance is brought about by the fact that vessels in this service have been operating at a loss, and the matter of advancing the rates has been under serious consideration for some time past. It is further explained that the 75-cent increase will simply take care of the greatly increased costs of operation and will not represent any profit for the vessels.

Build 173 Cars in Month

Washington, Jan. 13.—During November, 1919, according to an official announcement of the railroad administration, only 173 new cars, all of the freight type, were constructed in railroad shops, 151 were box cars, 77 being of wood and 74 having steel center sills. In the week ended Dec. 27, only 18 locomotives were shipped, 13 being built by the American Locomotive Works, two by the Lima Locomotive Corp., and three by the Baldwin Locomotive Works.

German Output Less

Washington, Jan. 6.—Germany's pig iron output last September fell from 569,375 tons in August and from 586,087 tons in September, 1914, to 531,167 tons, according to department of commerce advices. Stocks on hand, however, enabled the steel ingot production to drop only 1873 tons from the 739,389 tons turned out in August, from which 613,545 tons of rolled steel were produced, surpassing the earlier month by 8366 tons.

Forms Foreign Branch

With a capitalization of \$10,000,000, the Matthew Addy Steamship & Commerce Corp., has been organized at Cincinnati, according to an announcement made recently by President James A. Green of the Matthew Addy Co., that city. The new corporation is a subsidiary of the latter company which is a dealer in pig iron and coke. It will have charge of the export and foreign trade relations of the parent

company. Mr. Green will be president and other officers will be men who occupy executive positions in the original Addy organization. General offices of the new corporation are located in Cincinnati and it will operate branch offices in New York and Boston.

Equipment Men to Meet

The Material Handling Machinery Manufacturers' association will hold an open convention at the Waldorf-Astoria hotel, New York, Jan. 29-30. This meeting is intended to be a "get-together" for all manufacturers of mechanical handling machinery, accessories and equipment. While details of the program have not been completed, it is practically assured that the morning of Jan. 29 will be given over to a business session which will be followed by a luncheon at the hotel. The afternoon session will be devoted largely to the presentation and discussion of short papers on mechanical handling of material. A moving picture program, consisting of a number of the latest and largest installations will be a feature.

Reprints Price Booklet

Owing to the heavy demand from buyers and sellers of iron and steel for a complete record of extras and differentials on various iron and steel products now in effect, the American Iron and Steel institute has reprinted the third edition of its booklet showing government prices which was issued on Nov. 15, 1918. This booklet gives the maximum prices on iron and steel products as agreed upon by government officials and committees of the American Iron and Steel institute together with the prices, extras and differentials recommended by the committee on steel and steel products of the American Iron and Steel institute. The new edition has been durably bound in cloth.

Receives Burner Orders

Among the contracts recently awarded Freyn, Brassert & Co., 645 Peoples Gas building, Chicago, engineers, are the following: Orders specifying varying numbers of gas burners for blast furnace and coke oven gas as well as hydro-carbon burners, from the Semet-Solvay Co.; the Steel & Tube Co. of America; the Punxsutawney Furnace Co.; Algoma Steel Corp.; Wellston Iron Furnace Co.; Pittsburgh Crucible Steel Co.; Joseph E. Thropp, Everett, Pa.; Heppenstall Forge & Knife Co.; and the Carnegie

Steel Co. Similar equipment was ordered by the Shelton Steel, Iron & Coal Co., Stoke-on-Trent, England.

Canadian Merger Talked

A large Canadian steel merger to include the Dominion Iron & Steel Co., Ltd., the Nova Scotia Steel & Coal Co. and the Steel Company of Canada, is being negotiated, according to advices from Toronto. These three interests represent all but a small fraction of the entire Canadian iron and steel industry with the combined ingot capacity of 1,500,000 tons to 2,000,000 tons annually. It is not stated by the dispatches how far the proposed merger has progressed.

Newton Offers Stock

The Newton Steel Co., with a sheet plant at Newton Falls, O., expected to be in operation about March 1, is offering \$650,000 of a total authorized \$1,000,000, 7 per cent cumulative preferred stock. In addition to the amount now offered, \$55,000 was subscribed in advance of the offering, which makes the total issue of preferred at this time \$705,000 and leaving in the treasury \$295,000 for future requirements. The authorized common stock of the company is \$2,000,000, of which \$1,350,000 has been issued. The cost of the plant represents approximately the common stock and the preferred stock offered at this time will be working capital.

Struthers Sells Stock

Youngstown, O., Jan. 13.—Sales of \$1,250,000 in 7 per cent cumulative preferred stock of the Struthers Furnace Co. has been announced here. The new stock is the only preferred of the company outstanding, the capital for some time having been \$1,000,000, all common. The new financing is for the announced purpose of taking care of certain extensions and improvements under consideration for some time. Sale of the stock it is declared does not mean a change of ownership or control of the corporation which operates a modern blast furnace plant at Struthers, O.

New Mill Progresses

Officials of the Youngstown Sheet & Tube Co. expect to put their new tube mill under power by July 1. Considerable progress has been made in the laying of the foundation. The new mill will roll lapweld pipe 10 inches and larger and is designed to produce 5000 tons monthly.

Men of the Iron Trade

Personal News of a Business Character Regarding the
Men of Affairs of the Industry

JAMES H. GROSE became president of the Brier Hill Steel Co., Youngstown, O., on Jan. 10, when he was elected to that office at a special meeting of the board of directors. The directorate also accepted the resignation of William A. Thomas, who had filled the presidency since the company was organized. Mr. Thomas was chosen a member of the advisory committee of the Brier Hill Steel Co., to succeed David Tod, deceased, but will leave for California with his family the latter part of the month, for an extended rest. As announced in recent issues of THE IRON TRADE REVIEW, Mr. Grose was Youngstown district general superintendent for the Carnegie Steel Co., Pittsburgh, and in that office is succeeded by I. Lamont Hughes.

When Mr. Grose relinquished his duties with the Carnegie Steel Co. on Dec. 31, he was tendered a farewell dinner at the Hotel Ohio and presented with a silver tea set by the Carnegie official staff in Youngstown. The presentation was made by J. A. Freed.

Samuel S. Wales, chief electrical engineer of the Carnegie Steel Co., has been elected a director of the recently formed Electric Alloy Steel Co., Youngstown, O.

A. P. Stephenson, credit manager for the National Malleable Castings Co., Cleveland, has been promoted to be local treasurer for the company at its Indianapolis branch.

Edwin M. Ong has been placed in charge of the office recently established in the Finance building, Philadelphia, by the Latrobe Electric Steel Co., Latrobe, Pa.

R. C. Gillespie, New England representative of the Consolidation Coal Co., has become identified with the Eastern Coal & Export Corp., Richmond, Va., and will make his headquarters in New York.

William S. Boyd has been appointed a district manager for the Stalnaker Steel Co., Frick building, Pittsburgh. His headquarters, however, will be at the company's newly opened office at 410 Moffat building, Detroit. For the past 15 years, Mr. Boyd has been connected with the Pittsburgh

Steel Co., the Crucible Steel Co. of America and the Page Steel & Wire Co., in the capacity of purchasing agent.

J. J. Carr, general foreman of the Hull-Rust mine of the Oliver Iron Mining Co., has been transferred to the Missabe Mountain mine of the same company. The Hull-Rust mine is at Hibbing, Minn.

Richard Peters Jr., who has been connected with Rogers, Brown & Co.,



JAMES H. GROSE

Philadelphia, has become affiliated with Robert C. Lea & Co., 426 Stephen Girard building, Philadelphia, pig iron, coal, coke, etc.

F. R. Good, formerly affiliated with the Belton Machine Tool Co., Bridgeport, Conn., has been made superintendent of the new foundry now being operated by the Connecticut Co., Bridgeport.

Frank D. Heyburn, Edward Evans, Guy P. Bible and Morris E. Neeley have been admitted to partnership in the firm of Horace T. Posts & Co., 316 North Third street, Philadelphia, iron and steel jobbers.

Kenneth Duncan has been made superintendent of the Zenith Mining

Co., at Ely, Minn. Mr. Duncan formerly was with the R. B. Whiteside interests on the Mesabi and Vermilion ranges.

Robert Allcock of the Union Mfg Co., New Britain, Conn., has become superintendent of the foundry of Landers, Frary & Clark of that city, and will be assisted by William Albrecht in an advisory capacity.

Albert A. Bialas, who has been identified with the Columbia Steel & Shafting Co., Pittsburgh, for the past nine years, eight of which in the capacity of manager of sales, has resigned. Mr. Bialas has not yet made known his plans for the future.

Charles H. Keenan, auditor of the Clinton-Wright Wire Co., Worcester, Mass., has resigned, effective Dec. 31. Before the consolidation last year he was credit manager for the Morgan Spring Co., one of the companies in the merger.

Robert J. Magor, of New York, has been elected president and director of the reorganized National Steel Car Co., Hamilton, O. Other directors are Donald Symington, Baltimore; H. H. Pierce, of Sutherland & Cromwell, New York, attorneys, and D. B. Dewar of Hamilton.

H. C. Coleman, who was identified in various capacities in the Standard Sanitary Mfg. Co., Pittsburgh, for 10 years and who was general purchasing agent of the Allegheny Steel Co., Pittsburgh, for about a year, now is Pittsburgh district manager for the Union Petroleum Co.

John C. Nulsen, formerly president of the Missouri Malleable Iron Co., East St. Louis, Mo., has been manager of the plant since it became the East St. Louis Works of the National Malleable Castings Co., Cleveland. E. W. Felger, formerly local treasurer of the National company at Indianapolis, has been transferred to East St. Louis to discharge similar duties and is succeeded at Indianapolis by A. P. Stephenson, formerly credit and collection manager for the company at Cleveland. S. H. Standish, superintendent for the Missouri Malleable Iron Co., for many years, remains in that position for the National company.

Men of the Iron Trade

Personal News of a Business Character Regarding the
Men of Affairs of the Industry

ILAMONT HUGHES, president of the Lorain Steel Co., Johnstown, Pa., announced in THE IRON TRADE REVIEW of Dec. 25, 1919, succeeded as Youngstown district superintendent of the Carnegie Steel Co. James H. Grose, who resigned to become president of the Brier Hill Steel Co., on Jan. 1. Mr. Hughes has been connected with various subsidiaries of the United States Steel Corp. for a number of years. He had his first acquaintance with the steel industry as an engineer in the drawing room of the Braddock, Pa., plant of the Carnegie Steel Co., previously having been connected with the river navigation department of that company. He later gained operating experience at the Donora, Pa., plant of the American Steel & Wire Co., and from there went to Youngstown, O., as superintendent of the bar mills of that company. He subsequently became assistant general superintendent of the Ohio works of the Carnegie company at Youngstown, leaving to assist in the construction of the Ojibway plant of the Steel corporation in Canada. With the suspension of that work, on account of the war, he returned to Pittsburgh to become assistant general superintendent of the ordnance department of the Steel corporation. He became general superintendent when John S. Oursler was promoted to the position of general superintendent of the Homestead works of the Carnegie Steel Co. When the Steel corporation abolished its ordnance department, Mr. Hughes was chosen president of the Lorain Steel Co., Johnstown, Pa., to succeed Daniel Coolidge, who retired on account of ill health.

Stuart B. Marshall, consulting engineer and metallurgist, who formerly was general manager of the American Manganese Mfg. Co., and general superintendent of the Aluminum Co. of America's North Carolina developments, recently of Roanoke, Va., now has his headquarters in Washington.

Edward A. Waters, for the past nine years attached to the Pittsburgh sales office of the Republic Iron & Steel Co., Youngstown, O., has been transferred to the Chicago office of that company and will assume his new duties about the middle of January. He will specialize in the sale

of iron rolling mill products and pig iron in the Chicago territory.

Charles M. Schwab, on Jan. 2, entertained Admiral Jellicoe, former first sea lord of the British admiralty, at his home in New York. The admiral made the trip from Ottawa in Mr. Schwab's private car, accompanied by the latter and Archibald Johnston, vice president of the Bethlehem Steel Corp. A dinner tendered the admiral by Mr. Schwab at his house that night



I. LAMONT HUGHES

was attended by E. H. Gary, W. E. Corey, George W. Perkins, E. G. Grace, Archibald Johnston, A. C. Dinkey, John A. Topping, Charles Piez, E. R. Stettinius, J. L. Replogle, J. A. Farrell, B. M. Baruch and others.

A. E. DeClercq has been added to the Cleveland sales force of the Tacony Steel Co., Tacony, Pa. Mr. DeClercq, whose territory is Detroit and vicinity, is a metallurgist of 12 years experience, having been with the Timken-Detroit Axle Co., Chalmers Motor Car Co., and Fisher Body Corp., Detroit, and the Park Drop Forge Co., Cleveland.

Walter W. Hall, formerly connected with the Columbia Steel & Shafting Co., and prior to this connection,

Pittsburgh district sales manager for the Republic Iron & Steel Co., is again identified with the latter company, at its Pittsburgh office. Mr. Hall will serve under Charles T. Johnston, Pittsburgh district sales manager.

J. N. Klock, of Benton Harbor, Mich., has been elected president of the Muncie Malleable Foundry Co., Muncie, Ind., which recently acquired the plant of the Whiteley Malleable Castings Co., that city. Gov. William Sleeper of Michigan, has been made vice president; F. E. Crawford, of Benton Harbor, secretary; H. C. Udell, of Benton Harbor, treasurer, and A. L. Minoski, Muncie, general manager.

George L. Gerwig, for more than 33 years with the Republic Iron & Steel Co., Youngstown, O., and its predecessor, the Brown-Bonnell Iron Co., has resigned from the sales department of the company to make his home in California. Mr. Gerwig, following the organization of the Republic company, was transferred to the Chicago office and later to the Pittsburgh general offices, returning to Youngstown when the latter were moved to that city.

Clarence C. Dodge, manager for George F. Blake Jr. & Co., Worcester, Mass., steel and iron and heavy hardware, has been elected president of the Worcester Commercial Travelers' association, and John A. Denholm, vice president and general sales manager of the Clinton-Wright Wire Co., of that city, second vice president.

T. Aurelius, formerly assistant manager of sales, for the Colorado Fuel & Iron Co., Denver, has been promoted to be manager of sales. J. J. Fitzgerald, who has been division sales agent at Portland, Oreg., succeeds Mr. Aurelius as assistant sales manager at Denver. W. E. Maddeo has been promoted from Denver territory to be division sales agent, Portland. W. H. Beattie has been promoted to the division sales agency at Amarillo, Tex., to succeed G. B. Scharpff, who resigned to take his family to a different climate.

Men of the Machinery Trade

Personal News of a Business Character Regarding the
Men of Affairs of the Industry

A H. DITTMER, who is president of a new company known as the Dittmer Gear & Mfg. Corp., Lockport, N. Y., formed to manufacture automobile, truck and tractor gears, formerly was identified with production work and systematizing at the plant of the Packard Motor Car Co., Detroit. He later was secretary of production at the Chalmers Motor Co.'s plant and then was secretary to the president of the E. R. Thomas Co., Buffalo, and manager of its technical department.

R. H. Bowyer, vice president and factory manager of the Dittmer corporation has had a wide experience in connection with gear production. For four years he had charge of the gear machining departments of the Cadillac Motor Car Co., Detroit, and then became supervisor of the gear departments of the Studebaker Corp.'s plant, that city. After five years, he became supervisor in charge of the gear department of the Chalmers Motor Car Co., Detroit, and then for over two years was supervisor in charge of all gear work at the plant of the Covert Gear Co., Lockport, N. Y.

W. F. Williams, secretary and treasurer of the Dittmer company, also is vice president and treasurer of Williams Bros. Co., Lockport, N. Y.

W. Jackson, metallurgist of the new company, formerly was chemist and assistant in charge of the heat treating department of the Covert Gear Co., Lockport, N. Y.

W. J. Riley, efficiency engineer, formerly was assistant purchasing agent of the Covert Gear Co., Lockport. He is a practical machine builder and designer and at one time was tool superintendent and master mechanic of the American District Steam Co., Tonawanda, N. Y.

R. P. Francis, auditor of the Dittmer organization, formerly was assistant auditor of the Covert Gear Co., Lockport, N. Y.

H. Lindberg has resigned as production manager for the Cadillac Motor Car Co., Detroit, a position held by him for several years.

Wallace C. Hood, resigned recently as sales manager of the Standard Motor Truck Co., Detroit. It is un-

derstood that he will organize a truck manufacturing company.

E. W. Goodnow, has resigned as secretary and sales manager of the Dail Steel Products Co., Lansing, Mich., to accept an executive position with the Atlas Drop Forge Co.

J. Tennyson Seller, who has for the past six years been in charge of the industrial relations department of the Greenfield Tap & Die Corp., Greenfield, Mass., resigned Jan. 1.

H. E. Schulte, has assumed his duties as eastern manager of the Rhodes Metallic Packing Co., Chicago, with headquarters in the Oliver building, Pittsburgh.

William Groves, Warehouse Point, Conn., has been assigned to the sales department of the Chicago branch of the Pratt & Whitney Co., Hartford, Conn.

William M. Lyman, president and treasurer of the Holyoke Truck Co., Holyoke, Mass., has resigned to accept the position as general sales manager of the Brown Portable Conveying Machinery Co., Chicago.

John Batchelder has been made manager of the plant of the Eagle Mfg. & Tool Co., 2228 Lincoln avenue, Chicago, recently established to manufacture tools and dies and to conduct experimental work.

Charles Drum has been made factory manager for the Hayes Mfg. Co., Detroit. Harry Deering now is manager of sheet metal production. A. T. Wieland, superintendent of the body plant and L. B. Griffin, assistant to the president.

W. T. Tremaine has been appointed sales manager of the Co-Operative Machinery Co., Cleveland, which has leased a brick building, being built at 5230 St. Clair avenue, to be ready for occupancy about Feb. 1. F. A. Maxwell is president.

A. A. Blue has been appointed by the Duff Mfg. Co., Pittsburgh, to take charge of its heat treating department. Mr. Blue is a graduate of the chemical engineering department of Cornell university. For two years he was connected with the Midvale Steel Co. in

its heat treating department, and during the war served as assistant superintendent of heat treating and forge shop of the gun plant at the Watertown arsenal, Watertown, Mass.

E. L. Kelzer has been placed in charge of the new Chicago office of the John F. Byers Machine Co., Ravenna, O., at 20 West Jackson boulevard, where mechanical and sales service will be rendered on cranes hoisting engines, etc.

Albert B. Allen, formerly cashier of the First National bank, Greenfield, Mass., has been elected treasurer of the American Tap & Die Co., Greenfield, to succeed Walter E. Nichols, resigned, after 41 years service with the company.

James G. Heaslet, formerly vice president of the Studebaker Corp., Detroit, has been elected president of the Signal Motor Truck Co., that city, to succeed W. K. Hoagland, resigned. Mr. Heaslet directed Liberty engine production in Detroit during the war.

Carl J. Sittinger has been placed in charge of the branch office of John A. Stevens, Lowell, Mass., Akron and Cleveland, consulting engineer, which has been opened in Fall River, Mass. Mr. Stevens is vice president of the American Society of Mechanical Engineers and chairman of the boiler code committee.

Arthur J. White, Pittsburgh district manager of the Cement Gun Construction Co., Chicago, presented a paper at the annual meeting of the civil section of the Engineers' Society of Western Pennsylvania, which was held in the Union Arcade auditorium, Pittsburgh, Dec. 30. Mr. White's subject was: "Construction Work by Cement Gun Methods."

E. M. Herr, president of the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has been named by Secretary of the Treasury Glass to act as chairman of the American business and financial interests who will discuss with representatives of the republic of Ecuador, business and financial affairs, with an aim toward strengthening relations between the two countries.

Let Contracts For Duluth Mills

Minnesota Steel Co., Arranging For Quick Delivery of Material For \$9,000,000 Building Program—Operators Preparing For Busy Season and Look For Increase In Prices of Iron Ore—Assessments Lowered, But Mines Pay More Taxes

Special Correspondence of The Iron Trade Review

DULUTH, Minn., Jan. 12.—Commercial and industrial interests at Duluth are gratified by the recent announcement of George L. Reis, vice president and general manager of the Minnesota Steel Co., that \$9,000,000 will be expended by the company in 1920 for extensions and improvements including a wire mill with a capacity of 300 tons a day; the conversion of the rail mill for the manufacture of other products, and more houses at Morgan Park, the company's model town near the plant. Since the company's plans were outlined in THE IRON TRADE REVIEW, Dec. 18, it is learned that a number of contracts have been let, including those for doubling the capacity of the power plant, and for extensions of the hot-bed building and the coal storage yard. The American Bridge Co., obtained the contracts for the structural steel, which is to be delivered at an early date. More than 2400 men are now being employed at the plant, and it is intimated that the number will be greatly increased within the next few weeks.

The Northern Pacific railroad is planning to increase its yard facilities and to build some large units of freight sheds at Duluth at a cost of several hundred thousand dollars.

Mine operators on the Minnesota ranges are required to shoulder nearly 75 per cent of the total tax burden of St. Louis county in 1920, according to figures compiled at the office of Walter H. Borgen, county auditor. Of the \$20,705,448 to be collected this year, \$15,442,288, or 74.58 per cent, is to be paid by the mining industry. In 1918 the mine taxes were \$11,209,543, or 73.97 per cent of the whole; in 1917, \$9,006,042, or 71 per cent; in 1916, \$7,112,284, or 69.28 per cent, and in 1915, \$6,249,005, or 66.80 per cent.

Despite the fact that the mining companies will pay \$4,232,745 more in taxes this year than in 1919, the assessed valuation of the mineral lands in the county has been decreased \$9,218,692. The principal decrease in assessed valuation, as well as the largest increase in taxes was made at Hibbing. The value of mining property there is placed at \$82,205,763 as compared with \$85,140,078 for 1918.

This year, however, the mining companies at Hibbing will pay \$4,537,785, as compared with \$3,005,443 paid last year. That indicates the extent to which the tax rate has been advanced in this territory to provide for the increased revenue required by St. Louis county.

Duluth mining men and persons in close touch with conditions at the eastern steel plants are looking forward to a busy period after the opening of lake navigation next spring. Although official figures show that ore supplies on the Lake Erie docks Dec. 1 were practically the same as on that day in 1918, it is assumed here that operations at the furnaces will be more active during the winter months than a year ago, thus bringing stocks down to less than they were in the spring of 1919. It is taken for granted that heavier ore shipments will be necessary from the Lake Superior district in 1920 to assure full operations at all blast furnaces and steel plants.

The Oliver Mining Co. is employing approximately 12,000 men in the Lake Superior district, according to officials of the company. The independent operators also are keeping their organizations practically intact, in development work and in stockpiling at the underground mines. By doing so they expect to be in position next season to make shipments nearly equal to those of 1918, should conditions in the iron and steel trade warrant it.

While labor conditions on the ranges are more satisfactory than they were a year ago, with the men working more contentedly and showing greater efficiency, the departure of more aliens from this district is looked for early next spring. This may create a shortage. The same scales of wages as set last summer still prevail. Miners are paid from \$6.75 to \$7.25 a day, and common labor \$4.85 for 10 hours' work. Though I. W. W. agitators have been working under cover on the ranges for several months they have failed in their efforts to stir up trouble.

E. J. Maney, manager of mines for the Shenango Furnace Co., who recently returned from a business trip to Pittsburgh, expressed himself as

confident that 1920 will witness a large ore movement from the Lake Superior district. In his opinion, next season's scale of ore prices will be set at an early date to relieve suspense and give mine operators the opportunity to go ahead with their shipping arrangements. He did not care, however, to make any forecast as to what the season's figures will be. The Shenango interests are employing more than 600 men in getting the Shenango mine ready for the milling system of mining to be inaugurated next summer.

Clement K. Quinn, of Clement K. Quinn & Co., mine operators also has returned from a trip to New York, and is impressed with the favorable outlook for next season in the iron and steel trade. He expects ore prices for 1920 will be materially higher than in the last two years.

The various chambers of commerce in the Minnesota range towns have launched a vigorous educational campaign on the tonnage tax problem. Speakers will be sent to address meetings in southern Minnesota and present arguments against the tax. In a circular recently issued by opponents of the tax it is pointed out that the desire to impose a surtax was aimed originally at the United States Steel Corp., which was thought to control mining operations and to be the chief factor in the trade on the ranges. Attention is drawn to the fact that of the 126 mines operated on the Mesabi range in 1918, the Oliver Iron Mining Co., subsidiary of the Steel corporation operated only 42 and that all the 30 mines on the Cuyuna range were operated by independents. It also is stated that a tonnage tax would bankrupt more than half of the independent operators and would virtually leave the Steel corporation in control of the ranges.

Furnaces Resume

No. 1 furnace of the Bellaire, O., works of the Carnegie Steel Co., was lighted Jan. 8, and No. 2 stack on Jan. 10. It is expected that the plant will be in full operation in another week.

Here and There in Industry

Live Information Which Records the Expansion of Various
Lines of Productive Enterprise

AS ANNOUNCED recently, the Ohio Body & Blower Co., is the new name for the reorganized Ohio Blower Co., Cleveland, without change in official personnel. The new company takes over the three plants of the older company, two of them in Cleveland and a foundry, operating exclusively on the Ohio company's work at Orrville, O. The first plant in Cleveland was the exclusive home of the company for five years and the second houses its home offices. To this latter plant another unit is being added for the building of closed automobile bodies. When this addition will be completed, the company floor space will be increased from 150,000 to 350,000 square feet.

Starting 18 years ago in Cleveland with limited capital, the Ohio Blower Co., began the manufacture of a helico-centrifugal exhaust head, invented by its president, D. K. Swartwout. It also manufactured and erected dust-collecting systems. Other steam specialties, including steam and oil separators, steam traps, water-level control valves, feed-water heaters, etc., have been added from time to time. Then a rotary ball bearing ventilator was patented by Mr. Swartwout. Steel core ovens of the truck and shelf type, together with core racks and other accessories were added to the company's line. During the war a standardized ship cowl, complete with turning gear was developed and produced in large quantities for the government. These now are finding a peacetime market. Immediately following the armistice, the directors decided to enlarge the plant to incorporate the manufacture of motor bodies and the proceeds of the new stock, largely have been used for that purpose. Ample resources are in hand for further expansion in plant and business. D. K. Swartwout is president, and H. H. Lind, vice president of the Ohio Body & Blower Co.

OPEN back inclinable presses, formerly manufactured by the Sidney Power Press Co., Sidney, O., now are being made by the Thomas Spacing Machine Co., Pittsburgh. The Thomas company has purchased the entire business of the Sidney com-

pany, including all patterns, drawings, stock material, etc.

PEAR & CO. have been incorporated at Reading, Pa., with a capital of \$75,000, to do a business in iron and steel scrap. The incorporators are Samuel Pear, Samuel Jacobson and David Lipman.

WALDO BROS., and the Bond Co., Boston, have merged their industrial construction facilities. Harold L. Bond is president of the new company; James G. Lincoln is treasurer, and Fred W. Mathies, sales manager.

EARL J. CURFEW, Gardner, Mass., with Benjamin W. Preece and Edward F. Preece, both of Athol, Mass., have formed a partnership under the name of the Gardner Brass Works to make plumbers' unions and ferrules. The firm has leased a plant.

WILLIAM B. STOUT, formerly aircraft motor engineer of the Packard Motor Car Co., Detroit, has incorporated the Stout Engineering Laboratories, that city. Charles E. Barton and Russell E. Vought are affiliated with Mr. Stout in the enterprise.

THE Ackerman Mfg. Co., recently incorporated, has taken over the old plant of the Wheeling Ceiling & Roofing Co., at Warwood, just outside Wheeling, W. Va., and will install new machinery for the manufacture of sheet metal products. W. E. Ackerman is president of the company.

AS FAST as the material market will permit, the Fostoria Pressed Steel Co., Fostoria, O., will enlarge its plant and business, and for this purpose, it recently increased its capital. As soon as conditions permit it plans to go ahead with the erection of an addition and will be in need of some equipment, including an electric baking oven for enameling fenders and sheet metal parts. The increase in capital will also be used in taking

over the plant of the U. Trafelet & Bros. Mfg. Co., which will enable the company to manufacture its own tools and dies. R. J. Carter is treasurer.

CONTRACTORS are rushing to completion work on a plant for the Elyria Steel Products Co., Elyria, O., manufacturer of steel underframes for automobiles and motor trucks. The building, which is of brick and steel construction, is 80 x 160 feet, and machinery, which was ordered some time ago, is being installed as rapidly as it arrives.

FOR the purpose of supplying manufacturers in Ohio, Michigan and elsewhere with oxygen and hydrogen, the International Oxygen Co., Newark, N. J., is establishing a new branch plant at Toledo, O. The capacity of the plant will be 3,000,000 cubic feet of gas per month and it is stated that the purity of the gas will be 99.5 per cent or higher.

THE Centrifugal Pump Co., Inc., 434 Canal street, New York, recently increased its capital to \$25,000, and has taken over the business of S. B. Wetton & Co. It plans to continue the manufacture of multi-stage centrifugal pumps, but on a larger scale. At present the company is taking its inventory, and is not in a position to state what new equipment and material it is in need of.

THE Petroleum Heat & Power Co., Stamford, Conn., capitalized at \$2,000,000 has started work on the first building of a large plant which is planned for construction in that city. The company will manufacture an oil burner used in changing coal burning plants into oil burning plants. Col. F. Lathrop Ames of Boston is president of the new company which is said to be a reorganization of the Fess Rotary Oil Burner Co. which has a plant in Boston. Other officers are: Vice president, Robert Adamson of New York; vice president, W. G. Tarnahan of Boston; treasurer, F. Murray Forbes.

Here and There in Industry

Live Information Which Records the Expansion of Various
Lines of Productive Enterprise

OFFICIAL denial was made by Timken-Detroit Axle Co., Detroit, and Canton, O., recently that the company proposed to consolidate with other interests or to sell its assets. The statement follows:

The recent increase in capital was authorized to provide sufficient funds to take care of the rapidly growing business.

Directors elected in Canton are: H. H. Timken, chairman; W. R. Timken, A. R. Demory, H. W. Alden, Fred Glover, Heman Ely and Austin Lynch. They, in turn, elected the following officers: H. H. Timken, chairman of the board; A. R. Demory, president; H. W. Alden, vice president; Fred Glover, vice president and general manager; C. W. Dickerson, vice president and secretary; C. G. Rowlette, treasurer and assistant secretary; P. W. Hood, sales manager, and F. H. Maisonville, director of purchases.

HAVING purchased the plant of the Spring Steel Fence Co., Anderson, Ind., the Barber Mfg. Co., that city, maker of bed springs, etc., will operate on a larger scale than was possible in the former plant, recently damaged by fire. Production probably will start shortly after March 1, in the new plant which is better adapted to the Barber company's requirements.

THE Root & Van Dervoort Co. of New England, Boston, has been incorporated under the laws of Massachusetts as the selling agency of the Root & Van Dervoort Engineering Co., East Moline, Ill. The new department of the latter, organized to make bearings, not only will furnish the company with bearings for its own engines but for other automobile makers.

FOR the purpose of manufacturing nestable culverts, the Chattanooga Road Machinery Co., Chattanooga, Tenn., has purchased a building already equipped. The company is capitalized at \$250,000 with temporary office address, 917 Hamilton National Bank building, Chattanooga. Officers are: President, J. H. Dean, vice presi-

dent and treasurer, R. J. Riddle Jr., and secretary, Knapp Milburn.

RECENTLY associated with the Superba Coal & Coke Co., Pittsburgh, as vice president and general manager, general coal sales manager and general coke sales manager, respectively, A. A. Straub, Jay W. Johns and T. J. Atkinson have formed the Straub-Atkinson Coal & Coke Co., 351 Union arcade, Pittsburgh. It will deal in gas, steam and by-product coal, Connellsville coke for furnace, foundry and heating purposes

CAPITALIZED at \$25,000, the Sterling Tool & Mfg. Co., 495 Broadway, Milwaukee, has been incorporated and is engaged in the manufacture of dies, tools, jigs, fixtures, gages, special machinery, electric sockets, automobile hardware and metal stampings. The company has a well equipped plant. Officers are: President, K. Janiszewski; vice president, S. Schultz; secretary, J. A. Schultz, and treasurer, Joseph Mietus.

IN ORDER to enlarge the scope of its business and to add to its lines of manufacture the production of special confectionery machinery and utensils, the Practical Machine Works, 216 Center street, New York, has taken out incorporate papers in the state of New York. It is capitalized at \$6000. Officers of the company are: President, Armin King; treasurer, Abraham Glass, and secretary, Max Hochdorf.

CAPITALIZATION of the Production Foundries Co., Ann Arbor, Mich., has been increased from \$100,000 to \$200,000 in order to pay the company's bonded indebtedness and to finance the erection of a plant addition. The erection of this addition will not be undertaken until the spring, and it will be used as an extension to the molding department. Walter O. Adams is general manager of the company.

THE O. & J. Machine Co., Worcester, Mass., builder of labeling machines, has reorganized by the

election of Charles H. Oslund, president, J. Emanuel Johnson, vice president and treasurer, and M. J. Finnigan, auditor, the three constituting the board of directors. The change in ownership came about several months ago when Mr. Finnigan, president and general manager of the Worcester Products Co., and his present associates purchased the interests of William P. Palmer, Cleveland, president of the American Steel & Wire Co., Clinton S. Marshall and John B. Moss, district manager and assistant district manager, respectively, of the Worcester district of the American Steel & Wire Co. Production facilities are to be expanded.

DURING the last quarter of 1919, the Electric Furnace Co., Alliance, O., made a number of interesting installations. Other contracts have been closed and the equipment shortly will be installed. These include the following:

Electric furnace, Standard Sanitary Mfg. Co., Louisville, Ky., to melt yellow brass. Electric furnace, McRae Roberts Co., Detroit; 1500-pound capacity, 105-kilowatt furnace, White & Bros., Philadelphia.

105-kilowatt furnace, Akron Bronze & Aluminum Co., Akron, O., to melt red and yellow brass.

105-kilowatt furnace, Union Brass & Metals Co., St. Paul, to melt red and yellow brass.

105-kilowatt furnace, American Hardware Co., New Britain, Conn., to melt brass.

Three 1500-pound furnaces, Roberts Brass Works, Detroit.

50-kilowatt, 500-pound hearth capacity furnace, Westinghouse Electric & Mfg. Co., East Pittsburgh.

500-pound furnace, Wasson Piston Ring Co., Plainfield, N. J., to melt gray iron.

50-kilowatt, 500-pound hearth capacity furnace, Kayline Co., Cleveland, to melt yellow brass.

105-kilowatt, 2000-pound, nose-tilting furnace, with special electrically operated casting table, Mitsui & Co., Japan. Equipment is designed so that metal may be poured directly into the molds.

105-kilowatt, 2000-pound, nose-tilting furnace, with three casting tables, Parrish Pool Co., Cleveland.

One each 1500 and 2000-pound nose tilting furnaces, West Virginia Metals Corp.

40-kilowatt hearth type furnace, Lamson & Sessions Co., Cleveland, to heat treat bolts.

Here and There in Industry

Live Information Which Records the Expansion of Various
Lines of Productive Enterprise

COMPLETELY equipped the motor factories of the Curtiss Aeroplane & Motor Corp., Hammondsport, N. Y., were sold recently to L. J. Seely of that city. The plant now has been turned over to a new organization known as Keuka Industries, Inc., of which the officers are: L. J. Seely, president; John H. McNamara, vice president; K. B. MacDonald, secretary and treasurer. The directors are Glenn H. Curtiss, Hammondsport; K. B. MacDonald, Buffalo; J. H. McNamara, Hammondsport; Hugh Satterlee, New York; L. J. Seely, Hammondsport.

With the exception of Mr. Satterlee the directorate is composed entirely of men who for years have been connected with the Curtiss Aeroplane & Motor companies. Mr. Seely has been connected with the motor industry for over 10 years, first as president and sales manager of the Elbridge Engine Co., Rochester, and later for several years sales manager of the Curtiss Motor & Aeroplane companies. Mr. McNamara has been manager of the Hammondsport plant since 1912. Mr. MacDonald has been identified with the motor trade in various executive capacities since the early days of the Thomas Co., in Buffalo; later he joined forces with the Russell Co., Toronto, Ont., leaving it to become production manager of the Buffalo plant of the Curtiss company. When the United States entered the war he was granted a commission as lieutenant commander in the navy in charge of the navy aircraft station at Philadelphia. The organization plans to build and market high-grade automobile engines.

ANNOUNCEMENT recently was made that A. A. Straub, Jay W. Johns and T. J. Atkinson, formerly associated with the Superba Coal & Coke Co., Pittsburgh, have organized a new company known as the Straub-Atkinson Coal & Coke Co., with offices in the Union Arcade building, Pittsburgh. The new company will handle gas, steam and by-product coal as well as Connellsville furnace, foundry and heating coke.

INCORPORATED at \$100,000, the Accurate Screw Machine Co., 128-130 Mulberry street, Newark, N. J., will manufacture screw machine products.

It contemplates building a 1-story factory, construction on which will start March 1. Automatic screw machines will be installed for the production of metal novelties. Officers follow: President, O. A. Von Buckow; treasurer and secretary, David L. Heller, and manager, W. S. Patterson.

THE Flint Pattern & Foundry Co., 519 Brush street, Flint, Mich., has had plans prepared for the erection of a modern fireproof building, 40 x 100 feet, of concrete and steel construction. The first floor will be devoted to a foundry, while the upper floor will be devoted to the manufacture of bronze bushings. The foundry will be equipped with four furnaces of the gas or oil type and two coke-fired furnaces, molding machines, etc.

FOR the manufacture of aluminum automobile bodies, the Logansport Body Works, Logansport, Ind., will erect a 69 x 300-foot, 1-story building, and hopes to be on a producing basis by April 1. It also has purchased a 3-acre site for future expansion. The company is capitalized at \$200,000 and temporary officers have been elected. Temporary headquarters have been established at 412-424 High street, Logansport. Harry A. Shaw is general manager.

IN ORDER to finance the erection of a new plant in 1920, the Federal Bearing & Bushing Corp., Detroit, has increased its capital from \$60,000 to \$350,000. The new plant will triple the company's present capacity. According to Lloyd P. Jones, president, a large amount of the machinery necessary for the proposed plant has been purchased. Besides Mr. Jones, the officers are S. C. Reynolds, vice president and treasurer, and F. C. Heath, secretary.

THE Maxwell Steel Vault Co., manufacturer of steel burial vaults, Oneida, N. Y., recently increased its capital stock, in order to finance contemplated plant expansion,

made necessary by increased business. The company will use the additional money in the purchase of a site, erection of new buildings, purchase of machinery and equipment, which will consist of power presses, dies, power transmission and some electrical equipment.

WORK has been started by the Pittsburgh-Des Moines Steel Co., Des Moines, Iowa, on some extensive improvements. These will consist of a new shop building, 135 x 300 feet, equipped with traveling cranes and other modern equipment for the fabrication of structural steel. When completed the improvement will represent a cost of over \$100,000. Operations in the new shop are expected to commence in the early spring and it will have a capacity of approximately 1200 tons monthly.

AMONG the crane orders received by the Shepard Electric Crane & Hoist Co., Montour Falls, N. Y., during the past two weeks are the following: Two each 3, 5, 10 and 5-ton standard cranes with 33, 30, 90 and 34-foot span, respectively, from the Borden Brick & Tile Co., Soldsboro, N. C., American Car & Foundry Co., New York, American Car & Foundry Co., Buffalo, and the Knit Concrete Corp., Newport News Va., respectively; three 10-ton standard cranes with 90-foot span, from the American Car & Foundry Co., New York; one each 7½, 10, 10, 5, 5, 2, 10, 10, 10-ton standard cranes with 26-foot, 4½-inch 62-foot 2-inch, 52-foot 6¼-inch, 60, 25, 48, 100, 42, 68¼-foot span respectively, from the Parkersburg Rig & Reel Co., Parkersburg, W. Va., American Laundry Machine Co., Cincinnati, Glamorgan Pipe & Foundry Co. Lynchburg, Va., Cerney Pickas & Co., Chicago, American Agriculture & Chemical Co., Elizabeth, N. J., Flint Kote Co., Rutherford, N. J., American Car & Foundry Co., Buffalo, Carpenter Steel Co., Reading, Pa. Carpenter Steel Co., Reading, respectively, and one 3-ton transfer crane, 26-foot 11-inch span, from the Parkersburg Rig & Reel Co., Parkersburg, W. Va.

Obituaries

COL. JOHN M. FOSTER, founder of the Foster Engineering Co., Newark, N. J., of which he was president until his retirement two years ago, died Jan. 16 in his apartments in the Hotel Marie Antoinette, New York city. He was born in Springfield, O., in 1846, and enlisted as a private in the Civil war, obtaining the rank of first lieutenant. Three years later he was breveted lieutenant colonel by the Ohio legislature.

James McLean, vice president of the Phelps Dodge Corp., died at his home in New York, Jan. 7, aged 74 years.

Charles Ackermann, for many years sales manager of the Lancaster Iron Works, Inc., Lancaster, Pa., died suddenly at his home in Brooklyn, Jan. 8, aged 53.

L. M. Bushnell, aged 76, founder and former president of the Vaughan & Bushnell Mfg. Co., manufacturer of tools, Chicago, died Jan. 10 at Belleaire, Fla., of pneumonia.

Mahlon D. Miller, superintendent of the Waterbury, Conn., division of the New York, New Haven & Hartford railroad died of apoplexy, Jan. 5, at his home in Waterbury.

William L. Collins, 42, for several years a member of the sales force of the Rossing-Ernst Co., pipe coil manufacturers, Etna, Pa., died suddenly Jan. 3, at Etna.

Edward Brush, vice president of the American Smelting & Refining Co., and formerly connected with the Standard Oil Co. of New York, died at his home in Greenwich, Conn., Jan. 6, aged 65 years.

Horace G. Kauffman, dean of the Pullman Free School of Manual Training, died Jan. 8 at Pullman, Ill., after a short illness. He had been identified with advanced educational work for the past 40 years.

Elmer J. Gross, foreman of the cleaning room at the foundry of the General Fire Extinguisher Co., Auburn, R. I., died at his home in that town, Jan. 6, after a week's illness of pneumonia.

Wilson Warren Thomas, instructor of superintendents and foremen in the theory of steelmaking in the Worcester, Mass. district of the

American Steel & Wire Co., died in a hospital in that city, Jan. 4, aged 27 years.

Joseph A. Brophy, manager in the Levant for the Factory Products Corp., 2 Rector street, New York city, died Jan. 6, of influenza, at Bay Ridge, Brooklyn, aged 36. He had expected to sail for the Levant on the day of his death.

John P. T. Keys, 55, superintendent of the plant of the Pittsburgh Seamless Tube Co., Beaver Falls, Pa., died at his home in Rochester, Pa., Jan. 8, of pneumonia. He was a native of Brockwayville, Pa., but had resided in Rochester during the past 15 years.

John Herbert Snelling, 70 years old, president of the Marine Mfg. & Supply Co., New York, died at his home at East Orange, N. J., on Jan. 1. He was an electrical expert and marine engineer and is credited with having designed many devices against German submarines.

Joseph Isador Mitchell, assistant manufacturing superintendent of the Pittsfield, Mass., works of the General Electric Co., died at his home in that city, Jan. 7, aged 61 years. He had been with the company 37 years, first in New Britain, Conn., then Lynn, Mass., Schenectady and Pittsfield, going to the latter city in 1908.

Thomas Lilley, 72, founder and president of the Lilley Coal & Coke Co., died suddenly of apoplexy at his home in West Brownsville, Pa., Jan. 5. He was the owner of a vast acreage of coal lands in Washington county, Pa. He was a member of the Coal Operators' association of Pittsburgh.

Kim Rosholt, one of the leading business men of northwestern Wisconsin, and founder and president of the Northwestern Steel & Iron Co. and Northwestern Motor Co., Eau Claire, Wis., died at his home in that city on Jan. 5 at the age of 59. He was a native of Wisconsin and president of banks in Eau Claire, Chetek and Fall Creek, that state.

George P. Clark, president of the George P. Clark Co., Windsor Locks, Conn., maker of casters, wheels and trucks, died at his home in that town, Jan. 5, aged 81 years. He founded the business in 1892, which was incorporated in 1901, with his son,

George E. Clark, as treasurer and general manager. Mr. Clark attended the dedication of a large modern concrete factory addition, Jan. 1.

John C. Thomas, 24, of Bramwell, W. Va., president of the Thomas Coal & Coke Co., the Crystal Coal & Coke Co., the Flat Top Mining Co., and the Eclipse Milling Co., as well as a large stockholder and a director of the Flat Top Fuel Co., all located in the Pocahontas district of West Virginia, died at his winter home in Miami, Fla., Jan. 6, following an illness of several months. He left Cornell university to enter the naval aviation corps during the war and injuries received in a plane accident directly contributed to his illness.

Alvy Wilson Momeyer, one of the organizers of the American Tube & Iron Co., Brooklyn, N. Y., which subsequently was merged with the United States Steel Corp., died in a Brooklyn hospital, Dec. 7, following an operation for mastoiditis. Born in McKeesport, Pa., Mr. Momeyer was 61 years old and formerly was interested in several Brooklyn financial institutions, but for about a year preceding his death, had been an official of the South Brooklyn plant of the E. W. Bliss Co. He was secretary and treasurer of the American Tube & Iron Co. prior to its merger.

Alfred W. Tredway, president of the A. Tredway & Sons Hardware Co., Dubuque, Iowa, died recently at his home in that city, aged 68. He also was vice president of the John Ernsdorff Iron Co., at the time of his death. With his parents, Mr. Tredway located in Dubuque in 1851, and in 1868 he commenced to learn the fundamentals of the hardware business. Beginning as a clerk for Andrew & Tredway, he was admitted to a junior partnership in 1878. In 1889, he with his father and two younger brothers, founded the succeeding corporation, now operating as the A. Tredway & Sons Hardware Co. Under Alfred W. Tredway's guidance, the company absorbed the Schreiber-Conchar & Westphal Co., and in 1902, with the organization of an affiliated corporation bought the heavy hardware business of the John Ernsdorff & Sons Co. Mr. Tredway continued active in business and civic affairs until the time of his illness which resulted in his death.

Britain Now is Creditor Nation

Analysis of November Foreign Trade Shows British Are on Upgrade in International Finance—Visit of Sir George Paish Stirs Comment—Hoover Cries "Propagandist"—Denies Crash is Near—General Financial News

BY JOHN W. HILL, FINANCIAL EDITOR

AMERICANS who have been puzzling for months over conflicting reports from Europe respecting the financial conditions and the exact needs in the late belligerent countries have been plunged into further confusion by the controversy stirred up by the visit to this country of Sir George Paish, the well known British economist. Sir George, who often has been represented as the financial adviser to his government, is urging an international bond issue of \$35,000,000,000 guaranteed by all the members of the league of nations. Although repudiated by the British government he continues to preach that only such a plan would save Europe from an immense economic and financial collapse. It is declared in some quarters that the purpose of his visit was to endeavor to get a loan to England of \$4,000,000,000 which England could in turn loan to European countries. He has conferred with Washington officials but no announcement has been made respecting what proposals he had to make.

Hoover Sees No Collapse

In sharp contrast to the views of the Englishman, is the statement of Herbert Hoover, former food controller for Central Europe and the one man in the world whose judgment on the situation there should be precise. Mr. Hoover intimated that Sir George and others who supported his theory were "propagandists" and that further government loans to Europe wholly were unnecessary. Mr. Hoover asserted that European conditions are not nearly so black as they have been painted and that outside of suspending interest collection on the huge debt ordinary commercial credit arrangements would suffice to take care of the transatlantic needs in the future. He excepted a dozen cities in southern Europe where the people are starving and said this country should hasten food and supplies to them. Steps to do this have already been taken by Secretary Glass who a few days ago urged congress to appropriate \$150,000,000 with which to send food to Austria, Poland and other suffering countries.

Mr. Hoover contended that Europe

should get to work and buckle down to the great task of paying the inevitable debt of the war. Until the peoples abroad do this, he said, they cannot win the confidence of the world. He does not say Europe should be given no credits on a large scale—he merely objects to easy-going government credits which would increase the tax burden of the American people. Commercial credits with which to buy supplies, and raw materials the Europeans must have, he says. In Mr. Hoover's opinion most of the countries abroad have large amounts of acceptable collateral with which they should have no difficulty in obtaining long term commercial credits. In addition the former food controller points out there are numerous unscathed neutral nations made rich by the war which should come to the financial aid of Europe as well as this country.

On the heels of Hoover's views, together with reiteration of high Washington officials that the days of government foreign loans are over, the British treasury has come forward with a repudiation of Paish and his theories. He is not an official representative and the British government has no sympathy with his ideas, it is declared. The Northcliffe papers in England have launched an attack upon him, declaring that actually he is not a financier at all but rather a financial writer and has no official standing, and that "British interests are being harmed by his fussy and uninvited interference." On the other hand, some powerful British journals denounce Hoover. The *Daily Express* replying to his charge that Europe is not working declares that "Europe is willing to work but cannot get raw materials. Comprehensive and far-reaching financial arrangements must be made quickly and the United States must take a generous part in bringing this about. England cannot do anything effective unless America is ready to bear her out."

For International Commission

The *London Times* urges that the whole question be taken out of the hands of politicians and given over

to a convoked convention of great international bankers for solution. It admits that the situation is serious and might call for the support of the strong governments' credit to an international commission, but that the participation of the governments should stop there, the great practical work of organization being carried forward by private interests. In this country the machinery for such private organizations is provided in the recently-enacted Edge bill. The extent to which it will be taken advantage of remains to be seen. Banks will hesitate to invest in such corporations unless they feel that the investing public, on its part will purchase the bonds issued by the corporation.

British Have Trade Balance

One of the outstanding developments of international significance as reflecting progress being made toward recuperation is the showing of British foreign trade in November. That month marks the first in over five years that Great Britain has been a really self-supporting country. Visible exports during the month amounted to £34,446,084 less than import trade. During this month the income of British subjects from the earnings of British shipping, interest on British investments abroad, commissions on banking, insurance and other items of like nature, and income from the sale of bunker coal were approximately £40,000,000. Thus it is seen that Great Britain in November had a balance in her favor of more than £5,000,000. Great Britain is extending enormous credits to European countries in support of trade and she is increasing her imports of food but raw material and machinery imports are not increasing. Shipments of re-exports and of finished goods are growing by tremendous leaps. In cotton goods alone the 11 months' gain in exports was \$290,000,000 over the year before. According to a compilation of the Brookmire Economic Service, New York, exports of British leather increased 1109 per cent in the 11 months of 1919, machinery 210 per cent; re-exports 598 per cent; iron and steel 90 per cent, while the grand total of exports for the 11 months increased

132 per cent over the same period of 1918.

Wickwire Interests Join New Wire Merger

Following negotiations extending over several months official announcement finally was made Monday of the acquisition of the Wickwire Steel Co., Buffalo, a \$5,000,000 corporation, by the Clinton-Wright Wire Co., a \$16,000,000 corporation of Worcester, Mass. The merged interests will be called the Wickwire - Spencer Steel Corp., with a capitalization of more than \$20,000,000. The principal officers will be: President, T. H. Wickwire, Buffalo; vice president and general manager, George M. Thompson, president of the Clinton-Wright Wire Co. Harry W. Goddard, chairman of the board of directors of the Clinton-Wright company, is expected to retire. The headquarters of the company will remain in Worcester. Frank Kilmer, of Worcester, will be treasurer.

Under the merger \$5,000,000 worth of bonds and notes of the Wickwire Steel Co. will be retired. A New York banking syndicate will be formed to purchase \$12,500,000 of 15-year 7 per cent first mortgage bonds and \$7,500,000 of 8 per cent preferred stock. The capital stock will include 80,000 shares of class A common stock which will go to stockholders of the Wickwire company. The common stock of the corporation will be increased by an issue of 100,000 shares and will also be taken by the Wickwire interests.

Total assets of the combined properties are said to be in excess of \$30,000,000. The consolidation means that the corporation will be self-contained with its own iron mines, coal mines, ships, blast furnaces, steel and rod mills and complete finishing mills.

The Wickwire Steel Co. owns two 500-ton blast furnaces, a steel plant and mills at Buffalo, also iron mines at Iron River, Mich., and Mesabi range reserves, limestone quarries at Gasport, N. Y. Wickwire Bros., Inc., has a wire plant at Cortland, N. Y. The Buffalo steel plant which was completed in 1917 consists of four 60-ton open-hearth furnaces. In connection there was erected a blooming, rod, 18-inch continuous, wire and nail mills.

The Clinton-Wright company was formed some months ago by a combination of the Clinton Wire Cloth Co., the Wright Wire Co., the Spencer Wire Co., the Morgan Spring Co. and the National Mfg. Co.

The new merger places the Wick-

wire-Spencer corporation next in importance to the American Steel & Wire Co. as a wire producer. Offices will be maintained in Buffalo, San Francisco, Chicago, New York, Philadelphia, Boston, Providence and Tulsa, Okla. Head offices will be established in Buffalo.

Cleveland Drop Forge Co. Takes Over Plant

The entire Cleveland property of the Wyman & Gordon Co., of Worcester, Mass., has been acquired by the Cleveland Drop Forge Co., which was recently incorporated in Ohio with \$750,000 capital. The new owners, who not only have acquired the plant, but also the machinery, tools, dies, etc., of the former owners, will manufacture carbon, alloy and tool steel drop forgings. Officers and directors of the Cleveland Drop Forge Co. include, W. J. Fleming, assistant sales manager of the Bourne-Fuller Co., president; George C. Stebbins, vice president; W. C. Saeger, secretary; R. C. Bourne, treasurer; George E. Merryweather, Chester C. Bolton and J. J. Sullivan. Mr. Stebbins was for many years manager of the Wyman & Gordon Co., and will have active charge of the new organization. E. E. Stebbins in charge of production becomes a stockholder and continues in his former capacity.

Forms Large Company to Make Auto Parts

Joseph P. Kennedy, president of the Baltimore Malleable Iron & Steel Casting Co., and the Kennedy Foundry Co., Baltimore, has organized the Kennedy Corp., which will at once begin the erection of a plant at Curtis Bay, Md., for the manufacture of motor cylinders, gear cases and other automobile and tractor parts. Contracts already placed with the company total more than \$5,000,000 and more are assured. The company is capitalized at \$2,000,000 which it is expected will be the cost of the first unit of the proposed plant on a 4½-acre site. It is hoped to have the initial unit in operation by May 1, as initial deliveries on contracts are to be made by July 1. Work on a second unit is to be started within the year. The equipment in the first unit is to include 11 open-hearth furnaces of which four will consume fuel oil and seven powdered coal.

The United Shoe Machinery Co., Boston, has purchased the United Tack & Nail Works of Worcester, Mass.

More Output

Having Its Effect on Coal Tar Products Market—Sulphate Higher

New York, Jan. 12.—Production of coal tar products continues to improve. While the gain is not as rapid as desired, its influence is being felt, and sellers believe now that they will have benzol available in sizable quantities within the next month. In the meantime, benzol and also toluol are scarce, with demand of good proportions. Prices are unchanged. Pure benzol is holding at 27 to 31 cents, and 90 per cent benzol, 23 to 25 cents.

Coke Oven By-Products

Spot	
Per Gallon at Producers' Plants	
Pure benzol	\$0.27 to .31
Toluol28 to .32
Solvent naphtha22 to .27
Per Pound at Producers' Plants	
Phenol	nominal
Naphthalene, flake	0.07 to .08
Naphthalene, balls	0.08½ to .09½
Per 100 Pounds at Producers' Plants	
Sulphate of ammonia.....	\$4.00
Contract	
Per Gallon at Producers' Plants	
Pure benzol	\$0.27 to .31
Toluol28 to .32
Solvent naphtha22 to .27
Per Pound at Producers' Plants	
Phenol	nominal
Naphthalene, flake	0.07 to .08
Naphthalene, balls	0.08½ to .09½
Per 100 Pounds at Producers' Plants	
Sulphate of ammonia.....	nominal

Toluol is quoted at 28 to 32 cents Solvent naphtha is fairly plentiful, the rosin and grease extraction interests being virtually the only large users of this product. Quotations are steady at 22 to 27 cents.

Naphthalene flakes are scarce, with the drug trade still contracting for future shipments. Flakes are holding steady, however, at 7 to 8 cents. Balls are quoted unchanged at 8½ to 9 cents.

Quotations, ranging from \$6 to \$6.50, eastern seaboard, continue to be quoted on sulphate of ammonia for export. A strong upward tendency prevails, however, and it is likely that higher offerings will be made shortly. In the domestic market, little contracting is being done at this time, owing in part to the extent to which producers are booked ahead, prices on contract business hence largely are nominal. Spot prices continue at \$4.00 f.o.b. producers' plants, on the few odd lots which are available from time to time for nearby shipment.

Heavy Equipment Sells Freely

Mill Machinery and Crane Awards in Pittsburgh and New York Markets Are Numerous—Machine Tool Sales Scattered and Small Although Inquiries Are Liberal—Hammers Find Ready Market

CONTRASTED with the market a year ago, present trading in both machine tools and cranes is decidedly active. An absence of large lists is noted in all selling districts but a preponderance of inquiries with a fair number of small sales brings about a satisfactory and healthy business condition. A year ago equipment builders could make deliveries but users were waiting for lower prices and would not close; today deliveries are deferred in some cases for several months and users only close on absolute requirements, despite the fact that price increases seem near.

Heavy equipment seems to move more freely than machine tools at the moment. The Willys Corp., Elizabeth, N. J., closed on 12 cranes and the Westinghouse Electric & Mfg. Co., bought nine for Lester, Pa. The Simonds Mfg. Co., Long Island City, and the Kennedy-Van Saun Mfg. Co., New York, bought three and two overhead cranes, respectively. The Apollo Steel Co., Apollo, Pa., purchased four cranes and the Standard Steel Car Co., Butler, Pa., six. The naval ordnance department awarded 25 heat treating and forging furnaces and the navy yards at Washington, Philadelphia and Norfolk, each awarded cranes. Additional mill equipment has been ordered by the Algoma Steel Corp., Sault Ste. Marie, Ont., such as horizontal furnaces, soaking pits, crop conveyors, shears, etc. Hammers were bought in varying numbers by the Steel Improvement & Forge Co., and Aluminum Castings Co., Cleveland; Duff Mfg. Co., Pittsburgh; John Obenberger Forge Co., Cudahy, Wis.; Ingalls-Shepard

Forging Co., Harvey, Ill., and the Pioneer Pole & Shaft Co., Sidney, O.

Crane inquiries are issued by the Union Shipbuilding Co., Baltimore, which wants four; the American Tube & Stamping Co., Bridgeport, Conn., which seeks a locomotive crane; and the Sistersville Tank & Boiler Co., Sistersville, W. Va., which asks for three electric cranes.

Sizable lists of machine tools for the most part are absent but the Brewer-Titchener Corp., Cortland, N. Y., wants 25 forge drop hammers and 12 are asked by the General Electric Co., for its West Lynn, Mass., plant. Five shears are wanted by the Concrete Steel Co., New York. The Federal Shipbuilding Co., Kearney, N. J., is in the market for equipment including shears and the New York, New Haven & Hartford railroad is buying punches. The United States Steel Corp. is taking to equip various plants to increase their mechanical efficiency and reduce the labor factor. The Rolls-Royce Co., Springfield, Mass., has started to close on a sizable list and the Wagner Steam Pump Co., Canton, O., wants four or five tools, as does the Nineteen Hundred Washer Co., Toronto, Ont. Canadian dealers report an active market and expect a good year.

In Chicago attractive sales totals are made up of small and scattered sales of machine tools. All manufacturers are working to capacity and practically all plants find themselves short of equipment. Railroad buying in the west is not developing as expected. It now is said, preference will be given to maintenance of way over machine shop requirements.

Tools Bought In Small Lots; Cranes More Active

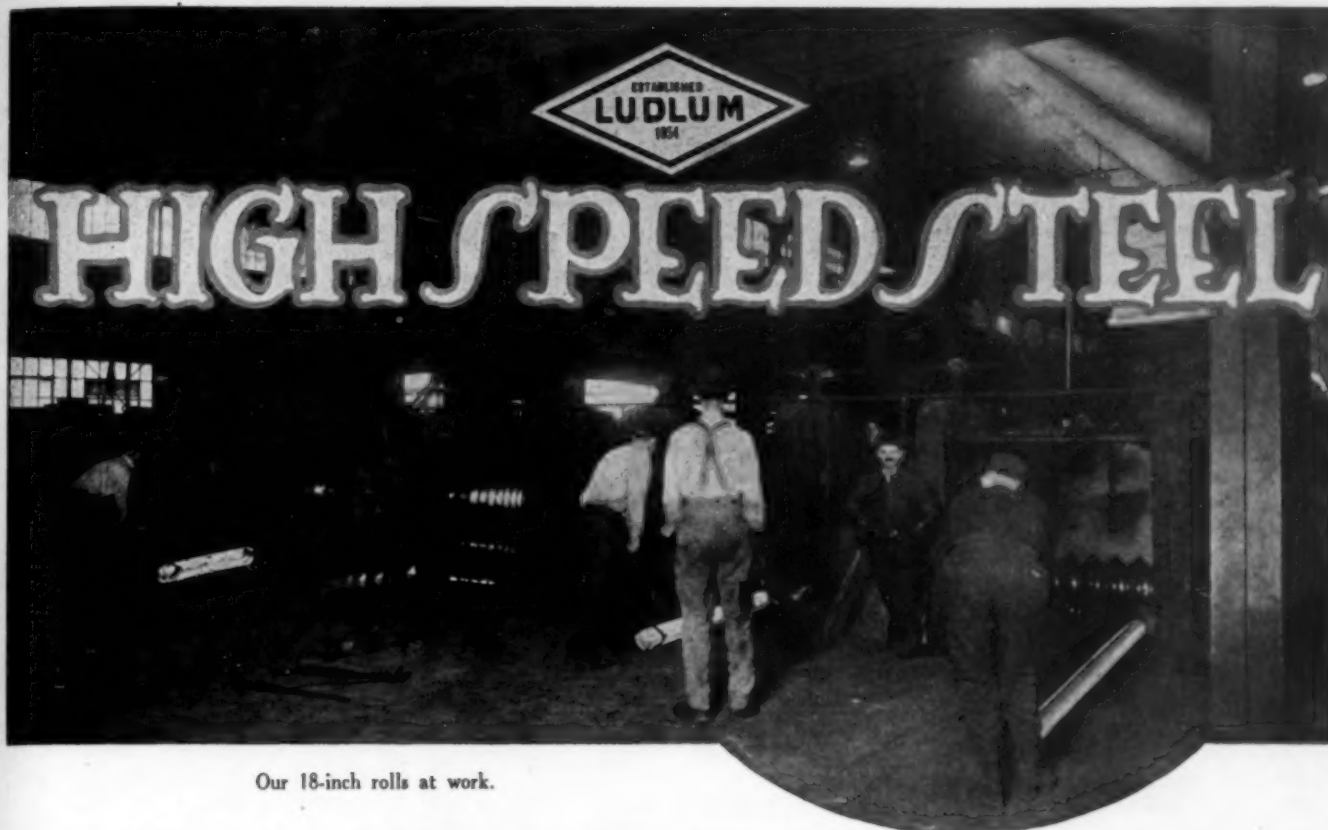
WHILE trading does not appear to be as active as it was last month; considerable buying continues to be done in the eastern equipment market. Small orders are being placed freely. Among the buyers is the Concrete Steel Co., 42 Broadway, New York City, which placed five shears for its plants at Cambridge, Mass., Birmingham, Ala., and Youngstown, O. The Federal Shipbuilding Co., Kearney, N. J., is buying equipment for an outfitting shop addition, including a couple of shears. The New York, New Haven & Hartford railroad has bought two punches. The Rolls-Royce Co. of America, Springfield, Mass., has started to close on a sizable list of miscellaneous machines. Frazer, Brace & Co., 1328 Broadway, New York City, are in the market for a 32-foot set of bending rolls. The General Electric Co. is inquiring for 12 forge drop hammers for its plant at West Lynn, Mass.; six are to be 2000 pounds and the remainder of 3000 pounds capac-

ity. A list of about 25 forge drop hammers is to be bought by the Brewer-Titchener Corp., Cortland, N. Y.

Outstanding in the eastern crane market is the award of 12 overhead units by the Willys Corp., Elizabeth, N. J. A 15-ton handpower crane, with 28-foot span, went to the Chisholm & Moore Mfg. Co., Cleveland, and nine 5-ton electric cranes were awarded the Case Crane & Engineering Co., Columbus, O., while three others were ordered from the Whiting Foundry & Equipment Co., Harvey, Ill.

Another contract of interest is one involving three 10-ton and two 30-ton overhead cranes for the Lester, Pa., plant of the Westinghouse Electric & Mfg. Co., the business going to the Champion Engineering Co., Kenton, O. The Kennedy-Van Saun Mfg. Co., 120 Broadway, New York City, has placed one 10 and one 30-ton cranes.

Westinghouse, Church, Kerr & Co., 37 Wall street, New York City, have placed three 3-ton overhead cranes for the Simonds Mfg. Co., Long Island City, with the



Our 18-inch rolls at work.

Do You Know That—

when you buy Ludlum Steel you are buying a scientifically made-to-order product—a product, the use for which has been decided upon before the charge is melted?

In the manufacture of Ludlum Steel, the standard is set at the start of the heat and maintained thruout each process of manufacture, pouring, cogging, rolling, heat treating and annealing. This is why you will always find Ludlum Steel always *consistently uniform*.

LUDLUM STEEL COMPANY, General Offices and Works: WATERVLIET, N. Y.

Branch Offices: Chicago Cambridge, Mass. Detroit Buffalo New York City
Cincinnati Cleveland Philadelphia Pittsburgh

Prompt shipments from our warehouse stock at Watervliet, N. Y.; Detroit, Mich.; Chicago, Ill.; or Cambridge, Mass., handled thru our Branch Offices.

LUDLUM STEEL CONSISTENTLY UNIFORM

MOHAWK EXTRA
High Speed Steel

POMPTON
Carbon Tool Steel

ALBANY
Alloy Tool Steel

ONEIDA
Oil Hardening Tool Steel

HURON
Alloy Die Steel

TETON
Ball Bearing Steel

SEMINOLE
"Foolproof" Chise' Steel

YUMA
Chrome Magnet Steel

Toledo Bridge & Crane Co. The General Leather Co., Newark, N. J., placed a 2½-ton electric crane, with 70-foot span, with the Pawling & Harnischfeger Co., Milwaukee. This latter company received an order recently from Sears-Roebuck for a 25-ton overhead crane, with 60-foot span, for a warehouse at Philadelphia. David Miller, 315 East 103rd street, New York City, stone works, bought a 5-ton electric crane with 65-foot span, from the Shepard Electric Crane & Hoist Co., Montour Falls, N. Y. Andersen Meyer & Co., 80 Wall street, New York, placed a 20-ton handpower crane, with 23-foot span, from the Whiting Foundry & Equipment Co., Harvey, Ill., for export to China. The Whiting company also received a 12-ton handpower crane, with 62-foot span, from the Honolulu Iron Works, 233 Broadway, New York City, and a 10-ton crane, with 37-foot span, from Henry R. Kent & Co., engineers, 141 Broadway, New York City, for a plant in Tennessee. The Pawling & Harnischfeger Co. was low bidder on two 15-ton electric cranes, with 57-foot span, for the Washington navy yard. The McMyler-Interstate Co., Bedford, O., recently received an order for three five and 10-ton cranes for the Philadelphia and Norfolk navy yards. The Chesapeake Iron Works, Baltimore, received an order from the Bagley & Sewell Co., Watertown, N. Y., for a 30-ton crane, with 28-foot span.

The Union Shipbuilding Co., Baltimore, is inquiring for four 10-ton locomotive cranes. Locomotive crane awards during the past week include a 20-ton crane for the Enterprise Coal & Supply Co., Elizabeth, N. J., placed with the Industrial Works, Bay City, Mich.

The American Tube & Stamping Co., Bridgeport, Conn., is in the market for a 10-ton electric crane, with 39-foot, 6-inch span. Other companies likely to be interested in cranes in the near future include the Kennedy Corp., Baltimore; the Atmospheric Nitrogen Co., Syracuse, N. Y., and the Bath-Portland Cement Co., Belvidere, N. J.

Heavy Equipment Awards Fairly Numerous in Pittsburgh

ACTIVITY which marked the first week of the new year is being maintained in the Pittsburgh district equipment market. The Algoma Steel Co., Sault Ste. Marie, Ont., has placed further business in connection with its new rail and structural plant, having awarded the contract to Alex Laughlin & Co., Pittsburgh, for three horizontal furnaces and two soaking pits, while it has placed the order for the crop conveyors, shears, etc.,

with the Treadwell Construction Co., Midland, Pa. Contract for 25 heat treating and forging furnaces for the naval ordnance plant at Charleston, W. Va., has been awarded to William Swindell & Bros. Co., Pittsburgh. The Jones & Laughlin Steel Co., Pittsburgh, has just placed with Mackintosh, Hemphill & Co., Pittsburgh, an order for a new plate mill to replace a present one at its Soho works. Front and back tables for this mill, will be furnished by the Mesta Machine Co., Pittsburgh.

Crane awards have been fairly numerous and include those for the new turbine plant of the Westinghouse Electric & Mfg. Co., East Pittsburgh, at Lester, Pa. The Alliance Machine Co., Alliance, O., has been awarded the 6-ton, and three 3-ton and the 2-ton cranes while the two 30-ton cranes were placed with the Toledo Bridge & Crane Co., Toledo, O., and the two 50-ton cranes with the Champion Engineering Co., Kenton, O. Three 10-ton cranes have not yet been placed. The Cleveland Crane & Engineering Co., Wickliffe, O., was the successful bidder for two 30-ton and two 15-ton cranes for the Apollo Steel Co., Apollo, Pa., while six 5-ton cranes, one of 60-foot span and the others of 45 feet, for the Butler, Pa., works of the Standard Steel Car Co. have gone to Manning, Maxwell & Moore, Inc.

Hammers find a ready market. The Erie Foundry Co., Erie, Pa., recently has taken orders for three additional hammers for the Steel Improvement & Forge Co., Cleveland; two for the Aluminum Castings Co., Cleveland; a number for the Duff Mfg. Co., Pittsburgh, and single hammers for the John Obenberger Forge Co., Cudahy, Wis., Ingalls-Shepard Forging Co., Harvey, Ill., and the Pioneer Pole & Shaft Co., Sidney, O.

Fair sized demands are noted for machine tools of all types and a satisfactory portion of the inquiries is being placed. Appropriations by the United States Steel Corp. for plant extensions and betterments for the present year are understood to be unusually liberal, especially for Gary, Ind., because of the desire to offset the shortage of labor as far as possible with mechanical devices. Already several tentative requests for prices have come out for various kinds of equipment from the corporation subsidiaries.

Flood of Inquiries Reach Cleveland Sellers

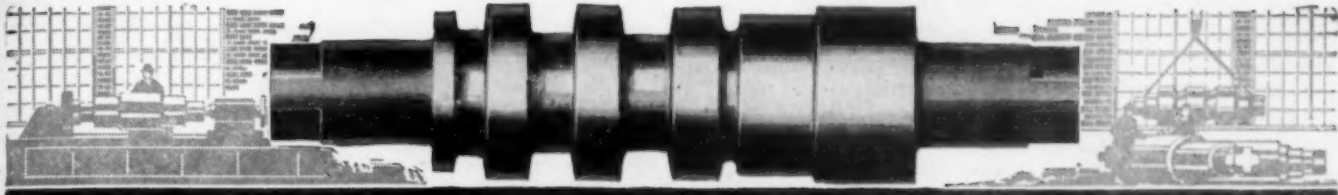
IMMEDIATE needs are causing a number of manufacturers to send their orders for machine tools, cranes and other equipment to Cleveland sellers. Sales, however, are out of proportion to the large number of in-

Ohio and Indiana Schools File Machinery Questionnaires

EDUCATIONAL institutions in Ohio and Indiana are in the lead in filing questionnaires with the director of sales, war department, Munitions building, Washington. In taking this first step toward obtaining machine tools from the government's surplus stocks at 15 per cent of the original cost to the government, these schools, colleges, etc., who are found to be eligible, will be in a position to obtain first choice of the stock to be allocated. Coupons entitling the institutions to obtain machine tools will be issued in the sequence of the filing of the questionnaires. The last schools, therefore, to fulfill the war department's requirements, will obtain their orders from the stock left by those taking the first advantage of the offer.

These machine tools are to be sold to educational institutions of recognized standing, under the provisions of the house resolution, popularly known as the Caldwell bill, as explained on page 167 of the Jan. 8 number of THE IRON TRADE REVIEW.

The director of sales will pass upon the eligibility of the various institutions which apply for machine tools. Those qualifying will receive a purchasing coupon for each machine allotted to them. The various bureaus of the war department having surplus stocks of machine tools for sale, will send descriptive bulletins from time to time to the eligible institutions, from which needed tools may be selected.



Here's a Case of "Don't Do As I Say; But Do As I Do."



Say, Fellas:

You bet I started 1920 right, put HUBBARD ROLLS on thruout, and now I kin forgit my roll troubles. Why don't you do the same?

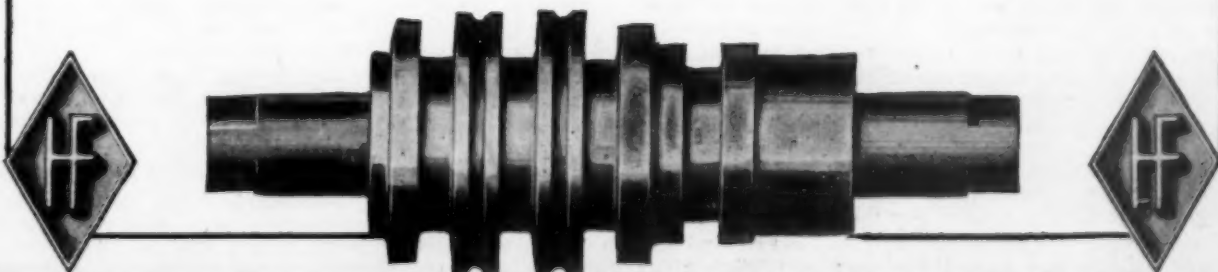
S'Long,

Rolling Mill Jim.—

Hubbard Steel Foundry Co.

EAST CHICAGO, IND.

All Kinds of Iron and Steel Rolls and Steel Castings.



quiries being received. The rate of inquiry is taken to mean that a huge amount of business is to be placed shortly. In fact, a number of projects are reaching the breaking point, but information concerning these is withheld by dealers. At best, the deliveries offered are unsatisfactory and this is helping to keep down the possible sales total. Some manufacturers are disinclined to order equipment which cannot be delivered for several months, not being able to foretell in what condition they will be at that time.

One list on which sellers are working and which will be closed promptly is that of the Sistersville Tank & Boiler Co., Sistersville, W. Va., referred to in this column last week. Specifications call for: One 3-motor 5-ton electric overhead crane, 56-foot, 6½-inch span to center of rails, hoist 20 feet to top of rails, 2-phase, 60-cycle, 220-volt, 4-wire, alternating current; one 3-motor 5-ton electric overhead crane, 33-foot 6¼-inch span to center of rails, hoist 20 feet to top of rails; one 2-motor 5-ton electric overhead crane, 18 1-3-foot span to center of rails, hoist 35 feet to top of rails; one set of pyramid bending rolls, capacity ½-inch plate, 10½ feet between hoistings, to be equipped with reversible motor; one 36-inch throat punch, capacity 1-inch hole through 1-inch plate, also constructed to punch 3-inch flue holes and 3 x 4-inch hand holes through ¾-inch plate, arranged for motor drive; and one ½-inch capacity rotary bevel shear with motor, 2-phase, 60-cycle, 220-volt, 4-wire.

Smaller inquiries are frequent. The Union Machine Co., 977 Logan street, Louisville, Ky., wants one 36 to 38-inch x 16-foot lathe and one 36 x 36-inch x 8-foot planer. The Kittoe Boiler & Tank Co., Canton, O., also wants a lathe. The Wagner Steam Pump Co., Canton, O., is in the market for one 18-inch x 8-foot engine lathe, with 3-step cone, double back gears and taper attachment, either new or used; one used No. 1½ Brown & Sharpe universal miller; one new Grand Rapids drill grinder, capacity ¼ to 2½-inch drill with motor, 220-volt, 3-phase, 60-cycle; and one No. 3-A Warner & Swasey universal hollow hexagon turret lathe. The Flexible File Co., Fremont, O., desires to obtain quickly one power press similar to the Toledo No. 3. The Iron Products Corp.,

La Crosse, Wis., desires to get in touch with manufacturers of upsetting machines or bulldozers for upsetting rods up to 1-inch to increase their diameter as high as 1½ or 2 inches. The High Speed Tools Corp., Toledo, O., desires an electric crane and the Consolidated Gas & Electric Co., Baltimore, also is in the market for a locomotive crane.

The Maxwell Steel Vault Co., Oneida, N. Y., is understood to be purchasing equipment including power presses, dies, motors, etc.; the Detroit Nut Co., Detroit, is in the market for automatic screw machines as well as tapping machines. The Accurate Screw Machine Co., 128 Mulberry street, Newark, N. J., states that it will buy a number of automatic screw machines, and Kaufman & Co., Inc., 499 Chene street, Detroit, will buy several drop hammers. The Pullman Co., Chicago, will buy presses, etc., to equip a press building, 80 x 200 feet, and a 3-story addition to produce open automobile bodies. The Ackerman Mfg. Co., Wheeling, W. Va., is understood to be in the market for machinery to manufacture sheet metal products. So far as can be learned the Eaton Axle Co., Cleveland, has not made any arrangements as yet for its equipment.

Small Orders Mean High Total Sales

IN SPITE of the absence of large inquiries the volume of business in the Chicago machine tool market continues strong, being made up of a multitude of small orders. All manufacturing companies appear to be busy to the limit of their capacity and almost all plants find themselves in need of more equipment to handle their output. Deliveries from machine tool builders are becoming further deferred, and in many lines now range between three and five months.

Railroads have not yet manifested much interest. It has been suggested that maintenance-of-way will be given first attention and that shop work may not be taken up immediately on the roads being returned to their owners. This position is radically opposed to the one formerly held by purchasing agents. They had lists prepared and seemed to be ready to come into the market at the first opportunity.

Construction and Equipment

Concise and Timely Business Building Opportunities
from the Field of Industry

Among New England Plants

AUGUSTA, ME.—The Edwards Mfg. Co. will build a 6-story, 65 x 155-foot storehouse.

AUGUSTA, ME.—The Aetna Electric Appliance Co. has been incorporated with \$125,000 capital, by E. M. Leavitt and E. A. Ballantyne.

BANGOR, ME.—The Wentworth Machinery Co. recently was incorporated with \$100,000 capital, to engage in a general automobile business, making machinery, hardware, metal castings, etc.

BIDDEFORD, ME.—The mills of the Pepperell Mfg. Co. are to be electrified at a cost of \$300,000.

LEWISTON, ME.—The Pope Appliance Corp. has been incorporated to make machines, appliances, etc.,

with \$250,000 capital, by William B. Shelton and Charles B. Carter.

BOSTON.—Plans are being prepared for a 2-story plant addition for the Mason Regulator Co.

BOSTON.—Plans are being drawn for a 1-story garage and machine shop for the L. W. McMullen Engineering Co.

BOSTON.—The Industrial Furnace Co. has been incorporated with \$75,000 capital. Oscar W. Hauserman is president.

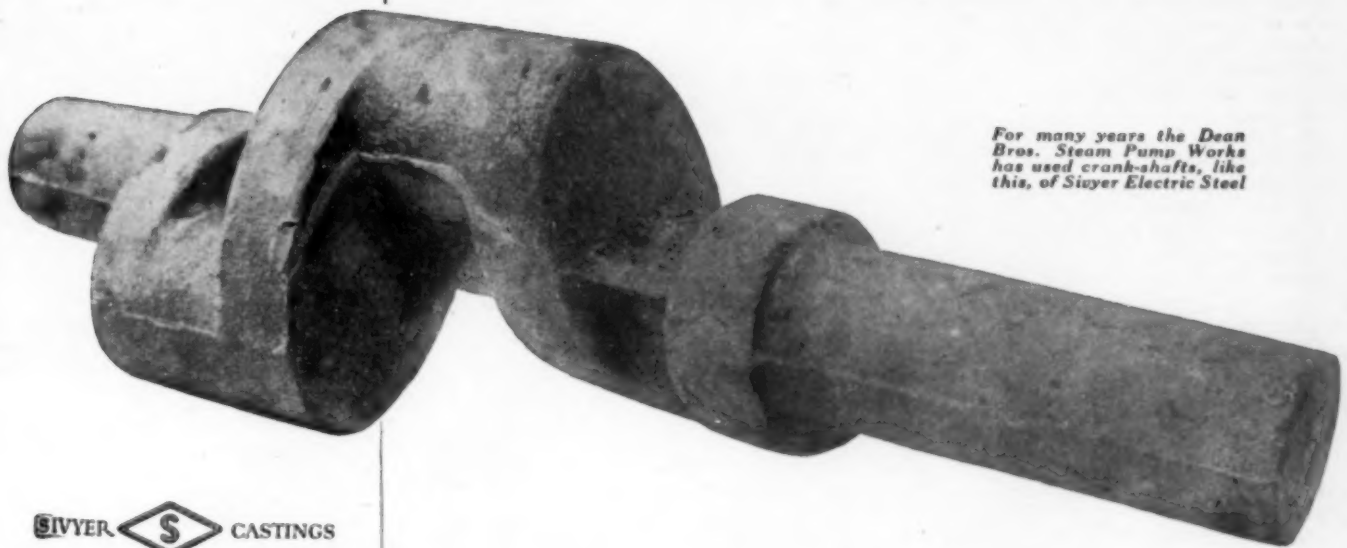
BOSTON.—The Walter H. Moreton Corp. has been incorporated with \$100,000 capital to manufacture and deal in marine engines and boats.

EAST CAMBRIDGE, MASS.—The H. B. Smith Co., Westfield, Mass., has let a contract for a 1-story, 100 x 200-foot storehouse.

EAST BOSTON, MASS.—Plans are being drawn for a ship repairing plant to cost \$10,000,000 on Meridian street for a corporation being organized.

FITCHBURG, MASS.—The Simonds Mfg. Co. has started work on a 4-story, 60 x 100-foot addition.

HOLYOKE, MASS.—The Century Co. has let a contract for a 2-story, 42 x 90-foot and a 1-story factory, to cost \$150,000. The building will be devoted to the manufacture of a mechanical dishwashing machine.



For many years the Dean Bros. Steam Pump Works has used crank-shafts, like this, of Sivyer Electric Steel

SIVYER  CASTINGS

The Sivyer Service of providing Electric Steel Castings has for its objects the decrease of machining costs and the increase of wearing-quality and life. Both are attained by methods which result from long experience and begin with the design of the casting itself. When we find that a casting we are asked to furnish is of a design not consistent with good foundry practice, we study its function in the completed unit and offer the necessary suggestions to make it a really practicable casting job without affecting in any way its function and efficiency.

Secondly: Sivyer Service analyzes the functions of the casting and specifies the proper composition steel for the job; long experience with carbon and alloy steels has enabled us to reduce costs and increase quality remarkably for many different industries.

Thirdly: Sivyer Service makes a careful study of the pattern and molding problems involved, for improper gating and insufficient risers are often the greatest wasters of machining labor and metal.

Fourthly: Sivyer Service analyzes carefully the proper annealing methods to be used and controls their proper application through unfailingly efficient equipment and men. In short, the Sivyer Service supervises every step necessary to secure unusually and unfailingly good castings of electric steel. It never relies on one factor alone, relies very little even on the natural freedom of electric steel from occluded gases and on its commonly recognized merit in resisting crystallization. It also depends but little on the inherent scientific accuracy of the electric furnace process. From casting-design to sand-blasting and tumbling, the fundamental superiority of Sivyer Steel is due to its men and metal. Their value is best proved by the fact that, although the production of steel castings is generally looked upon as a local one, the Sivyer market is national.

THIS crank-shaft casting is one of many interesting illustrations of the merits of Sivyer methods and metal that have won for Sivyer Castings their national market. Crank-shaft castings must be absolutely sound, entirely free from shrink-holes and other defects. Cast crank-shafts must be made of superior steel so thoroughly annealed that they will have to the utmost that superior strength and resistance to crystallization so vitally essential to their function. For years Sivyer methods and metal have produced for Dean Bros. cast crank-shafts so free from flaws, so thoroughly proof against crystallization, that the record thus made has influenced a number of manufacturers in different sections of the country to come to Sivyer for similar castings.

SIVYER STEEL

SIVYER STEEL CASTING COMPANY, MILWAUKEE

Say you saw it in THE IRON TRADE REVIEW

HOLYOKE, MASS.—The newly organized Century Machine Co. has let the contract for the first buildings of its new plant. The concern is capitalized at \$600,000 and the present construction will cost approximately \$150,000.

LYNN, MASS.—The I. W. Perkins Co., Inc., has been incorporated to build wagons, auto bodies, etc., with \$16,000 capital, by E. E. Macklerman, Isaiah W. Perkins and Cornelius T. Perkins.

NEWBURYPORT, MASS.—The Metal Products Co. has been incorporated with \$10,000 capital by L. M. Grant, Norman Russel and Peter I. Lorton.

NORTH ANDOVER, MASS.—The Davis & Furber Machine Co. will erect a 4-story, 80 x 240-foot plant.

SPRINGFIELD, MASS.—The National Equipment Co. has awarded the sub-contracts for a 150 x 150-foot manufacturing building.

SPRINGFIELD, MASS.—Bids close Jan. 21 for a 2-story, 48 x 195 x 271-foot factory for the Cheney-Bigelow Wire Works, to cost \$85,000.

TAUNTON, MASS.—The General Electric Co. has let a contract for a 1-story, 89 x 206-foot branch plant to cost \$50,000.

TURNERS FALLS, MASS.—The Woods Method Corp., maker of axes, is contemplating erecting a factory here.

WHITINSVILLE, MASS.—Plans are being drawn for a 3 and 4-story, 95 x 500-foot factory to cost \$300,000 for the Whitin Machine Works.

WORCESTER, MASS.—The American Steel & Wire Co. will erect a 2-story building at its north works.

WORCESTER, MASS.—The Worcester Wire Works, Inc., has let the contract for a 1-story, 50 x 257-foot factory addition and is having plans made for another factory of the same size.

WORCESTER, MASS.—The O. & J. Machine Co., manufacturer of automatic labelling machinery, has been reorganized and has plans for extension of its facilities. Charles R. Oslund is president.

PAWTUCKET, R. I.—The William H. Harkell Mfg. Co., bolts and nuts, has let the contract for a 2-story, 81 x 123-foot factory.

PROVIDENCE, R. I.—The Barstow Stove Co. is building additions.

PROVIDENCE, R. I.—The Imperial Knife Co. will erect a 2-story, 100 x 200-foot factory and other buildings to cost \$200,000.

ANSONIA, CONN.—The Ansonia O. & C. Co. contemplates a factory and power house to cost \$500,000.

BRIDGEPORT, CONN.—The Presteel Mfg. Co. has been incorporated with \$50,000 capital.

BRIDGEPORT, CONN.—The Bridgeport Screw Co. will build a 2-story, 20 x 150-foot and a 1-story, 50 x 100-foot wire mill.

BRIDGEPORT, CONN.—Work has started on a 2-story, 40 x 125-foot plant for the Bridgeport Hardware Mfg. Co., to cost \$35,000.

GREENWICH, CONN.—The Stone-Franklin Co. has been incorporated with \$750,000 capital to engage in the manufacture of marine equipment.

EAST HAMPTON, CONN.—The Valley Foundry Co., Inc., contemplates a foundry addition.

HARTFORD, CONN.—Sub-contracts have been let for the \$250,000 plant of the Royal Typewriter Co.

HARTFORD, CONN.—A site has been purchased by the Merrill Machine Co. on which the company plans a plant addition.

HARTFORD, CONN.—A \$65,000 factory building will be erected by the Hartford Fairmount Co., to be devoted to the manufacture of machinery.

HARTFORD, CONN.—The Frasse Steel Works, Inc., has been incorporated with \$1,000,000 capital by A. E. Brion, L. E. Brion, Forest Hills, N. Y., and R. K. Newman, West Hartford, Conn.

HARTFORD, CONN.—The Connecticut Tubing Co. has been incorporated to make tubing and allied products with \$75,000 capital by B. I. Ashmun, Edward L. King, H. E. Olyroyd and J. B. Champlin.

HARTFORD, CONN.—The stockholders of the Billing & Spencer Mfg. Co. have authorized an expenditure

of \$250,000 for plant extensions. From a \$200,000 a year business in the tool making department, work has increased, until during 1919 the business in this branch exceeded \$1,000,000.

MERIDEN, CONN.—The Miller Bros. Cutlery Co. contemplates a factory extension.

MERIDEN, CONN.—The Meriden Engineering & Supply Co. has been incorporated with \$50,000 capital, by S. N. Dunning, M. A. Leavens and M. M. Hauenstein.

NEW HAVEN, CONN.—Plans are being drawn for a 3-story, 80 x 100-foot factory extension for the A. C. Gilbert Co.

NEW HAVEN, CONN.—The Wireless Bell Mfg. Co. has been incorporated for \$10,000 by Morris Strachansky, E. Haven and L. M. Rodman.

NEW HAVEN, CONN.—The Lyons Level & Tool Co. has been incorporated with \$50,000 capital, by G. W. Lyons, West Haven, Conn.; J. W. Moffett and Ernest Gregory, Derby, Conn.

OAKVILLE, CONN.—Plans are being prepared for a 1-story, 60 x 150-foot plant for the Autotype Co.

OAKVILLE, CONN.—The Autotype Co., maker of wire goods, is taking bids for a 4-story, 60 x 150-foot factory to cost \$20,000.

PLAINFIELD, CONN.—The Newton Mfg. Co. has increased its capital from \$50,000 to \$100,000 and plans an addition.

SEYMOUR, CONN.—The Fowler Nail Co. plans to move from here to Buffalo, where it has a site for a new plant.

SHELTON, CONN.—The Premier Potter Printing Press Co. will erect a 4-story, 40 x 75-foot plant addition to cost \$60,000.

STAMFORD, CONN.—The Petroleum Heat & Power Co. has let a contract for a 1-story, 160 x 200-foot plant, to include a 100 x 200-foot main factory room and a 60 x 100-foot machine shop and boiler room.

THOMASTON, CONN.—The Seth Thomas Clock Co. has let the contract for a 4-story, 80 x 200-foot factory extension.

WATERBURY, CONN.—The American Pin Co. has let the contract for a 1-story addition to its office building and plans a 4-story, 85 x 240-foot factory building.

WATERBURY, CONN.—The Waterbury Body Co. has been incorporated to build automobile bodies with \$20,000 capital, by Karl Eckhardt, Thomaston, Conn. L. M. Raffel and T. Raffel.

WATERBURY, CONN.—The Reidville Mfg. Co. recently was incorporated with \$50,000 capital to manufacture metal novelties, by E. G. Evitts, Walter Goettlich and L. F. Rich.

WINDSOR, CONN.—The General Electric Co. is preparing plans for a plant addition.

North Atlantic States

BROOKLYN, N. Y.—The Atlas Can Co. recently was incorporated with \$50,000 capital, by J. and V. R. Kaufman and W. I. Cohen, 241 Wythe avenue.

BROOKLYN, N. Y.—The Page Foundry Corp. recently was incorporated with \$30,000 capital, by M. Klein, H. E. Diamond and A. Werner, 52 West 119th street.

BROOKLYN, N. Y.—The American Ramming Machine Corp. has been incorporated with \$100,000 capital, by J. E. Pritchard, T. Rock and M. J. Joyce, 562 Carlton avenue.

BUFFALO.—The Youngblood Electric Heater Corp. has been incorporated with \$150,000 capital, by H. J. Youngblood, R. L. Schwartz and J. M. McAleer.

FILLMORE, N. Y.—The Fillmore Electric Co. recently was incorporated with \$250,000 capital to make electricity for light and power, by W. L. and H. G. and E. B. Young.

LOCKPORT, N. Y.—The Root Electric Sign Co. has been organized by F. Floyd, A. Root, A. L. Hoag, Roy H. Earnest, of this city, and others, and will build a plant here.

LONG ISLAND, N. Y.—The Joseph McGee Iron & Brass Foundry Co. and the Russell Foundry & Machine Works have consolidated and in the future will be known as the McGee-Russell Founders & Machinists Co. The new company is capitalized at \$60,000 and was incorporated by F. and J. M. Russell and M. M. Storm, 323 East Twenty-fifth street, Brooklyn, N. Y.

NEW YORK.—The Anchor Cutlery Co. recently was incorporated with \$10,000 capital, by J. Zimmerman, A. Gorfinkel and S. Fishman, Yonkers.

NEW YORK.—The Vanguard Machinery Co. recently was incorporated with \$50,000 capital, by F. I. Arnold, S. A. and A. Ortlieb, 226 West 113th street.

NEW YORK.—The Polon Hardware Mfg. Co. recently was incorporated with \$60,000 capital, by L. J. Fine, A. G. Friesner and M. Kahn, 368 Grand street.

NEW YORK.—The Liberty Toy & Novelty Co. has been incorporated with \$15,000 capital, by R. P.

Gricks, W. Rand and A. A. Noon, 524 West 166th street.

NEW YORK.—The Domestic Steel & Metal Corp. recently was incorporated with \$25,000 capital, by H. L. Ettinger, M. Antine and H. Bloom, 149 Broadway.

NEW YORK.—The Burwin Co., metal cutting tools, recently was incorporated with \$8000 capital, by E. A. Judge, C. G. Johnson and W. H. G. Watson, 41 Park Row.

NEW YORK.—Otto Surks has been incorporated to make metal molds and containers, with \$10,750 active capital, by G. Banks, G. F. Gilligan and O. Surks, 177 Grand street.

NEW YORK.—The Brook Iron Works, Inc., recently was incorporated with \$50,000 capital, by E. E. Baker, E. H. Lockwood and F. P. Rowe, 44 Hampton court, Brooklyn, N. Y.

NEW YORK.—The A. E. Engineering Corp. has been incorporated with \$10,000 capital to make regulators for gases, by A. Shepard, D. and H. Schaefer, 17 East Fortieth street.

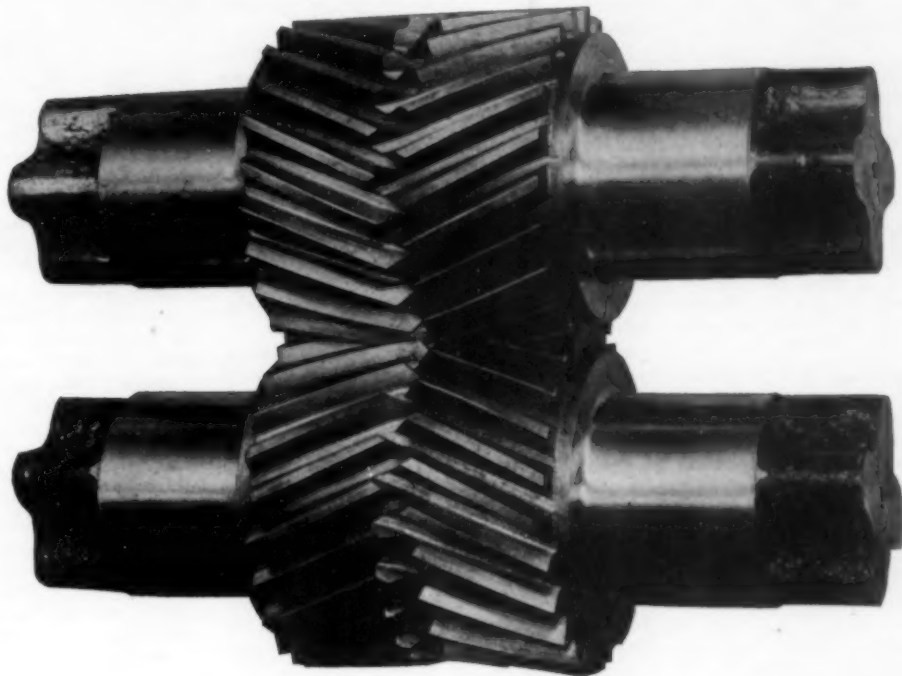
NEW YORK.—The Viray Corp. of America, electrical equipment, has been incorporated with \$15,000 active capital, by H. A. Mackie, L. W. Murry and S. F. Livingston, 516 Fifth avenue.

NEW YORK.—The Elk Film-Mending Machine Co. has been incorporated with \$26,000 active capital, by H. Hirsch, A. Demes and J. Tenner, 180 Bay Twenty-sixth street, Brooklyn, N. Y.

NEW YORK.—The Munger Products Co., silicon, aluminum and bronzes, has been incorporated with \$5000 active capital, by G. P. Strellinger, J. W. Dunnell and D. B. Munger, 220 Fifth avenue.

NEW YORK.—The Ajax Fastener Co., Inc., recently was incorporated with \$100,000 capital to manufacture snap fasteners, by S. Katz, 1378 College avenue, M. N. Cohenne, 143 West 127th street, and R. Steiner, 239 East Twenty-sixth street.

NIAGARA FALLS, N. Y.—The Niagara Falls Power Co. is considering building a tunnel and power canal



MILL PINIONS

MADE FROM

Open Hearth Steel Castings

We own and operate one of the largest steel foundries in the West, making castings from 1 to 100,000 pounds.

THE FALK COMPANY
MILWAUKEE, WIS.

AGENTS: Pittsburgh—W. O. Beyer, 1007 Park Bldg. New York—M. P. Fillingham, 50 Church St. Wilkes-Barre—Vulcan Iron Works. Denver—Denver Engineering Works. San Francisco—F. W. Grimwood, Rialto Bldg.

from the upper Niagara river to the north end of this city.

RICHFIELD SPRINGS, N. Y.—The Simmons Garage & Machine Shop recently was incorporated with \$30,000 capital, by P. Simmons, J. A. Losee and W. T. Wilden.

ROCHESTER, N. Y.—The Rochester Motors Co. contemplates a \$60,000 plant addition.

ROCHESTER, N. Y.—A \$150,000 assembling plant will be erected by the National Fire Escape Corp., which was recently incorporated with \$250,000 capital. G. Webster is one of the officers.

SYRACUSE, N. Y.—The Nixon Broach & Tool Co. has been incorporated with \$100,000 capital, by J. Shahan, K. S. and G. C. Nixon.

SYRACUSE, N. Y.—Gere & Willis has been incorporated to make automobile supplies with \$30,000 capital, by H. M. Gere, W. W. Willis and O. W. Hoff.

SYRACUSE, N. Y.—Organization of a \$5,000,000 air nitrogen company has been perfected by the Solvay Process Co., of this city, and the General Chemical Co., according to an announcement just made by E. L. Pierce, president of the Solvay company. A \$1,000,000 plant will be erected, possibly at Syracuse. The company will be known as the Atmospheric Nitrogen Co.

WATERVLIET, N. Y.—The Submarine Engineering & Construction Co. recently was incorporated with \$50,000 capital, by L. Bassett, W. F. Murphy and H. J. O'Keefe, Watervliet.

CARLISLE, PA.—The Carlisle Foundry Co. has been organized by C. S. Brinton, Thomas McDonald and others, and will build an addition to its plant.

CONNELLSVILLE, PA.—The Paragon Motor Car Co., capital \$3,000,000, has been organized by J. Fred. Kurts, P. E. Markell, and others of this city, and will build a plant.

MILTON, PA.—The American Car & Foundry Co. has announced plans for additions to double its capacity.

MONACA, PA.—This borough is considering building a municipal waterworks plant.

MT. CARMEL, PA.—The Milton plant of the American Car & Foundry Co. will be enlarged.

Central States Activity

CUDAHY, WIS.—The Federal Rubber Co. is preparing to erect additions and install tire, tube and rubber goods manufacturing equipment at an estimated cost of \$350,000.

MILWAUKEE.—The Milwaukee Brush Mfg. Co., 51 Erie street, has purchased the 2-story building at 784 Thirtieth street and will make alterations and install considerable equipment. G. L. Cornell is manager.

NEENAH, WIS.—The Saller-Whitmore Co. has broken ground for a 1-story addition to its gray iron foundry and machine shop, to cost about \$35,000.

SHEBOYGAN FALLS, WIS.—The White Wagon Works intends to enlarge its factory and is increasing its capital from \$33,000 to \$75,000.

ADRIAN, MICH.—The Raymond Garage Equipment Co. recently was incorporated with \$500,000 capital, to manufacture gasoline storage tanks, etc., by W. H. Marshall and A. D. Billings.

ALMA, MICH.—The Republic Motor Truck Co. will make additions to cost about \$200,000.

BAY CITY, MICH.—The plant of the Union Motor Truck Co. recently was damaged by fire. The loss was estimated at \$15,000.

BENTON HARBOR, MICH.—The Benton Harbor Engineering Works has been chartered with \$20,000 capital, by Thomas J. Mullen and others, to do a general machine shop business.

BUCHANAN, MICH.—The Clark Trucktractor Co.

PHILADELPHIA.—A 3-story experimental shop, 60 x 201 feet, will be erected at the Frankfort arsenal.

PHILADELPHIA.—The Motor Parts Co. has leased manufacturing space in a 7-story left building now being built.

PHILADELPHIA.—Contract for a 3-story factory building, 86 x 140 feet, has been awarded by S. Gro.s. The building will cost \$60,000.

TRAFFORD, PA.—The Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., proposes to spend at least \$2,000,000 for improving its plant.

NEWARK, N. J.—The Specialty Handle Mfg. Co. recently was incorporated with \$125,000 capital, to engage in the manufacture of handles, etc.

NEWARK, N. J.—Edward A. Grant, architect, has completed plans for a 2-story factory for the Overman Cushion Tire Co., Belleville, N. J. The building will be 54 x 120 feet.

NEWARK, N. J.—Contracts will be awarded shortly for the first unit of the \$1,000,000 plant to be erected by C. R. Curtis, former manager of the Spitzdorf Electric Co. The plant will manufacture automobile accessories.

NEWARK, N. J.—Plans for a \$130,000 plant for the manufacture of metal beds are being prepared by W. O. Bartlett, architect. The name of the owner has not been made known. The plant will consist of a general factory building, 140 x 240 feet, and a power house, 32 x 52 feet.

NEW BRUNSWICK, N. J.—The International Motor Truck Corp. has completed negotiations for the New Brunswick plant of the Wright-Martin Aircraft Corp.

RUTHERFORD, N. J.—The Campbell Co., Inc., recently was incorporated with \$25,000 capital, to manufacture and deal in boilers, etc., by William Bell, Colin Campbell and F. W. Conklin.

BALTIMORE.—The Nilson Yacht Building Co., East Thirtieth street, capital \$30,000, will build a joiner and machine shop at once.

FREDERICK, MD.—The Automotive Tractor Co. will build a 1-story plant 50 x 200 feet.

SPARROWS POINT, MD.—The Bethlehem Steel Corp. has awarded a \$35,000 contract for a 1-story plant building, 50 x 92 feet.

has been incorporated with \$500,000 capital, by Eugene B. Clark and others, to manufacture motor cars, tractors, etc.

COLDWATER, MICH.—The Coldwater Machine Works has been organized with \$20,000 capital, by Virgil C. Bower and others, to manufacture factory and farm machinery.

DETROIT.—The Detroit Gear & Machine Co. contemplates a plant addition.

DETROIT.—Contracts for a 4-story addition to the Hudson Motor Car Co. have been let.

DETROIT.—The E. & B. Mfg. Co. has been chartered by W. G. Breitmeyer, 557 Seminole avenue, and will manufacture metal specialties.

DETROIT.—The Morgan & Wright Rubber Co. has let contracts for a power house. The company is spending \$950,000 for plant additions.

DETROIT.—The Burroughs Adding Machine Co. will erect a 2-story plant and office building for its Canadian branch at Walkerville, Ont.

DETROIT.—Capitalized at \$15,000, the Star Tool & Die Works recently was incorporated by Harry Jam'son, 88 Melrose avenue, and others.

DETROIT.—The Crescent Tool Co. has been incorporated with \$50,000 capital, to manufacture tools, etc., by William Schenk, 556 Concord avenue, and others.

DETROIT.—The Columbia Motors Corp. has leased the plant of Everitt Bros., Mack avenue, and is re-

ported planning a new plant. J. G. Bayerline is president.

DETROIT.—The Packard Motor Car Co. has let contracts for a 4-story plant addition.

DETROIT.—The Continental Tool Works has been incorporated with \$60,000 capital, by S. F. Wall, 20 Hillsboro avenue and others, to manufacture machine tools.

DETROIT.—The Pierce-Molitor Co. has been chartered with \$50,000 capital by E. C. Molitor, 529 Cadillac avenue, and others, to manufacture refrigeration machinery.

DETROIT.—The Crary Mfg. Co. recently was chartered with \$50,000 capital, by C. R. Crary, 184 Stanley avenue, and others, to manufacture automobile accessories.

DETROIT.—The Krickow Process Co. recently was incorporated with \$20,000 capital to operate a tool and machine shop, by Fred Krickow, 335 Clairpointe avenue, and others.

DETROIT.—The Ever-Ready Mfg. Co. has been incorporated with \$50,000 capital, by R. G. Conley, 5 Goebel building, and will engage in the manufacture of laundry machinery.

DETROIT.—The Motor Spindle Co. has been incorporated with \$300,000 capital, by Harry Svendsgaard, 254 Collingwood avenue, and others, to manufacture automotive spindles, axles, etc.

DETROIT.—The Union Welding Co. has been incorporated with \$16,000 capital, by Samuel Stalhopulas, 842 West Jefferson avenue, and others, to do a general metal welding business.

DETROIT.—The Clayton & Lambert Mfg. Co. has purchased 10 acres on the Detroit Terminal railroad, as a site for a motor parts plant, to cost \$750,000 and to contain 200,000 square feet of floor space.

ECORSE, MICH.—The Wallace Struble Mfg. Co. recently was incorporated with \$12,500 capital by R. B. Wallace, 479 Montclair avenue, Detroit, and others, to manufacture motors and motor vehicles.

GRAND RAPIDS, MICH.—The General Motors Corp., according to a report, has acquired 62 acres as a site for a plant to be devoted to the manufacture of automobile parts.

IMLAY CITY, MICH.—The Imlay City Foundry Co. has been organized with \$25,000 capital, by P. W. Mulder and others.

JACKSON, MICH.—Montgomery Ward & Co. has been incorporated with \$450,000 capital, by J. E. Hauronic, Maywood, Ill., and others, to manufacture machine shop equipment.

KALAMAZOO, MICH.—The Automotive Sheet Metal Co. has been incorporated with \$100,000 capital, by C. B. McDole and others, to manufacture sheet metal products.

KALAMAZOO, MICH.—The Fuller & Sons Mfg. Co., truck transmission builders, plans alterations to its main building and foundry, at an estimated cost of \$200,000. R. P. Ramp is in charge of the foundry improvements.

KALAMAZOO, MICH.—The General Gas Light Co., manufacturer of gas heating devices, plans to double its capacity through the erection of a 3-story plant addition, 70 x 218 feet, and a boiler house. H. R. Humphrey is general manager.

KALAMAZOO, MICH.—The Clarage Fan Co. plans a \$100,000 building program, which provides for the doubling of the foundry department, installation of a second cupola and enlargements to the core room and pattern shops. Charles Clarage is head of the company.

LANSING, MICH.—The Federal Drop Forge Co. has been organized with \$400,000 capital.

LANSING, MICH.—The Briscoe Motor Corp. has purchased the motor car body plant of the John Bohnet Co. and will enlarge it.

LANSING, MICH.—The Olds Motor Works will donate a tract of land to the city as a site for a \$2,000,000 lighting and power plant.

MUSKEGON, MICH.—The drop forge plant of the Continental Motors Corp. recently was damaged by fire. The loss has been estimated at \$50,000.

MUSKEGON HEIGHTS, MICH.—The Pyle Pattern Works is erecting an addition to its plant.

SHEPHERD, MICH.—A plant will be built here

for the production of farm tractors, the invention of J. E. Meyers.

VASSAR, MICH.—The J. C. Green Foundry Co. has purchased a site of seven acres on which it plans a foundry, 60 x 180 feet. J. C. Green is president.

WYANDOTTE, MICH.—The McCord Mfg. Co. plans several plant units, to be devoted to the manufacture of motor car parts.

BELLEVILLE, ILL.—The Excelsior Foundry Co. recently took out a permit to erect an addition to its plant.

BLOOMINGTON, ILL.—Dayton, Keith & Co. recently were incorporated with \$250,000 capital, to engage in the manufacture of machinery, by L. L. Keith, Marquis Eaton and others.

CHICAGO.—The Continental Can Co. will erect a 3-story warehouse, 130 x 500 feet, at an estimated cost of \$210,000.

CHICAGO.—Kroeschell Bros. Co., 460 West Erie street, will build a machine shop, boiler plant and office building, to cost \$450,000.

CHICAGO.—The Stromberg Electric Co. has purchased a site, 295 x 628 feet, and will erect a plant, 200 x 220 feet, at a cost of \$160,000.

CHICAGO.—The Johnson Fare Box Co., S. P. Butler president, 236 South Robey street, will build a 3-story plant, 120 x 165 feet, costing \$100,000.

MOLINE, ILL.—The Moline Tool Co. has increased its capital from \$12,500 to \$162,500. A large part of the new capital will be used for the purchase of new equipment.

ROCKFORD, ILL.—The Rockford Milling Machine Co. will build an addition 53 x 65 feet.

AURORA, IND.—The Ball Bearing Mfg. Co., Cincinnati, has leased the plant of the Schipper Machine & Tool Mfg. Co. here.

CONNERSVILLE, IND.—The Tri-County Electric Co. has been incorporated with \$10,000 capital to manufacture electrical appliances. The incorporators are L. B. Huck, Earl Wiley and F. F. Russell.

EAST CHICAGO, IND.—The machine shop and office of the George B. Lambert Co. has been damaged by fire. The loss has been estimated at \$150,000.

ELKHART, IND.—The E. C. Mfg. Co. has been incorporated with a capital of \$50,000, to manufacture spark plugs. P. C. Kendall is an officer of the company.

GOODLAND, IND.—The Goodland Mfg. Co. has been incorporated with a capital of \$250,000, to manufacture electrical supplies. The directors are Lawrence Romine, Dale A. Rowe and E. E. Kertis.

GOSHEN, IND.—The Hastings Mfg. Co. has been incorporated with \$600,000 capital, by Charles E. Hastings, John L. Peterman and Charles F. Morse.

HAMMOND, IND.—The Hammond Malleable Iron Co. has been incorporated with a capital of \$10,000, to manufacture malleable iron products, by H. J. Wanner, H. C. Wanner and B. J. Steelman.

INDIANAPOLIS.—The Automobile Parts Co., L. G. Cummins, manager, 1105 Bates street, will build a 1-story plant 100 x 200 feet.

INDIANAPOLIS.—The C. & G. Pattern Works has been incorporated with a capital of \$10,000, to manufacture iron patterns, by F. D. Crider, Charles J. Gister and A. H. Gister.

STEVENS POINT, WIS.—The Northern Motor & Supply Co., capitalized at \$15,000, has been chartered by J. E. Delzell, H. C. Schneider and M. M. Ames, to manufacture automobile equipment. A plant will be built at once.

WABASH, IND.—The Wabash Mfg. & Supply Co. has been incorporated with \$10,000 capital, to manufacture automobile parts, by James T. Mills, George W. Kendall and William M. Story.

CANTON, O.—The Motor Castings Co. recently was incorporated with \$500,000 capital, by H. H. Timken, J. G. Obermeyer, Charles Balough, G. W. Russell and Austin Lynch.

CINCINNATI.—The Nolte Screw Machine Products Co. has been incorporated with \$75,000 capital, by Edward G. Nolte, Louis G. Nolte, George Nolte, August B. Luckey and John L. Moorhead.

CLEVELAND.—The Perfection Parts Mfg. Co. re-

cently was incorporated with \$100,000 capital, by R. H. Reiter, Charles C. Bemer and others.

CLEVELAND.—The United Stamping & Machine Co. has been incorporated with \$267,000 capital, by D. R. Wilkins, John N. Schultz and others.

CLEVELAND.—The Pigott Steel Co. recently was incorporated with \$2500 capital, by Thomas E. Pigott, 632 Frankfort avenue, Reginald A. Joplin and others.

CLEVELAND.—The Wilson Welding & Repair Co. recently was incorporated with \$50,000 capital, by J. Paul Lamb, Williamson building, E. A. Foote and others.

CLEVELAND.—The Draper Mfg. Co., manufacturer of steel barrels, has purchased a site on which it plans a large plant the first unit of which will cost \$50,000.

CLEVELAND.—The Forest City Machine & Forge Co., 5101 Lakeside avenue, is reported planning a machine shop addition, 1-story, 73 x 99 feet, to cost \$20,000.

CLEVELAND.—The plant of the Crucible Steel Castings Co., Champlain avenue and Canal road, recently was damaged by fire. The loss has been estimated at \$10,000. M. J. Tielke is treasurer.

COLUMBUS, O.—The Columbus Gas Engine & Machine Co. recently was incorporated with \$10,000 capital, by C. P. Reading, E. G. Fetherlin, Joe Fahy, Gustav A. Nuesle and Frank J. Lang.

DAYTON, O.—The National Cash Register Co. contemplates alterations to its foundry.

DAYTON, O.—The Burnett-Larsh Co., pump maker, will erect a 5-story building, doubling its present plant capacity.

DAYTON, O.—The Carroll Engineering Co. has increased its capital from \$100,000 to \$300,000, and will erect a plant, 150 x 250 feet.

DAYTON, O.—The Metallic Construction Co. recently was incorporated with \$30,000 capital, by Albert Davis, Archie Sherrer and others.

DAYTON, O.—The Dayton Appliance Co. recently was incorporated with \$25,000 capital, by J. Q. A. Johnson Jr., H. A. Estrabrook, B. D. Moore and J. H. Coolidge.

DAYTON, O.—J. G. Petosky, T. M. Hlester and Joseph Lehman, head the National Steel Products Co., capitalized at \$90,000, which has taken over the National Vacuum Machinery Co.'s plant, 1101 East Second street. The company will make plating equipment, refrigeration machinery, tools, jigs, etc.

ELYRIA, O.—The Standard White Metals Co. has let a contract for a building. Temporary offices of the company are at 230 Troxel building. George Stevens is president.

HAMILTON, O.—The Hamilton & Rossville Hydraulic Co. plans the erection of a power house.

LIMA, O.—The plant of the Lima Brass & Iron Co. recently was slightly damaged by fire.

MADISON, O.—The A. E. Russ Twist Drill Co. recently was incorporated with \$157,500 capital.

MANSFIELD, O.—The Kenney Foundry, H. D. Kenney, manager, recently was damaged by fire. The loss has been estimated at \$25,000. Plans for rebuilding have not been made known as yet.

MARYSVILLE, O.—The Steel Casket Co., Cedar Rapids, Iowa, has leased a plant here, in which it plans to start operations shortly, according to a newspaper account.

MT. VERNON, O.—The Chapman Machinery Co. recently was incorporated with \$300,000 capital, by W. B. Chapman, W. R. Culbertson, Z. E. Taylor, F. H. Thomas and B. E. Williams.

NEWARK, O.—The Harris Heating Co. has been incorporated with \$20,000 capital by J. Howard Jones and others, and will manufacture automobile heating engines.

NEW PHILADELPHIA, O.—The Wise-McClung Mfg. Co., manufacturer of vacuum cleaners, etc., plans to increase its capital to \$1,000,000, in order to enlarge its plant. The additions will include a 2-story building for assembling and storage of small parts, and an enlarged machining and drilling building, steam heating and power plant. The foundry will also be enlarged.

NORTH LAWRENCE, O.—The North Lawrence Alumi-

num Co. recently was incorporated with \$30,000 capital, by William H. Longworth, Thomas H. Longworth and Harmon S. Richardson.

SEBRING, O.—The Rath Foundry & Machine Co. recently was incorporated with \$50,000 capital, by Charles J. Rath, Charles M. Wilson, Samuel L. Eardley, E. B. Fritchman and Sumner Oesch.

TOLEDO, O.—The Toledo Pipe Threading Machine Co. plans a plant addition, 1-story, 15 x 50 feet, to cost \$20,000.

TOLEDO, O.—The McNaul Boiler Co. has leased to the Detroit Stoker Co. the foundry located on Water street.

TOLEDO, O.—The Toledo Machine & Tool Co. contemplates a pattern shop, 1-story, 53 x 168 feet, to cost \$45,000.

TOLEDO, O.—The Summit Tool Co. has been incorporated with \$30,000 capital, by William J. Fritsche, Mark Winchester and others.

YOUNGSTOWN, O.—The Reliance Wheel Co., according to a report, will erect a new plant on a site which it recently purchased. Joseph Grennam is president.

ZANESVILLE, O.—The Zanesville Malleable Co. is reported planning plant extensions.

ZANESVILLE, O.—The Federal Radiator Co. has had plans prepared for a plant, 1-story, 236 x 700 feet, to cost \$525,000.

LEXINGTON, KY.—The National Spring Product Co., Chicago, is considering building an automobile cushion plant here.

CHARLESTON, W. VA.—The Barton Boiler Works has been incorporated with \$5000 capital to operate a boiler shop, by Harry Barton, Thomas White and others.

MARLINGTON, W. VA.—The Marlinton Dye & Chemical Co. will build a plant here soon.

MOUNDSVILLE, W. VA.—M. B. Lisberger is president of the United Zinc Smelter Corp., of this city, which will build a \$500,000 addition.

MULLENS, W. VA.—The Union Power Co. has been incorporated to operate a light and power plant with \$25,000 capital, by H. B. Smith, D. W. Hill, D. C. Howard, T. Brooke Price and J. J. D. Preston.

WHEELING, W. VA.—The Wheeling Ceiling & Roofing Co. will enlarge its plant.

MINNEAPOLIS.—The Stinson Tractor Co. has opened a branch at Eau Claire, Wis., and plans to remove its main works to that city after reincorporating under Wisconsin laws, and doubling its capitalization of \$500,000.

BRITT, IOWA.—The Hawkeye Woven Wire Fence Co., J. Q. A. McClurg president, is having plans prepared for a manufacturing plant.

DAVENPORT, IOWA.—The Mid-West Machine Tool & Supply Co. has been incorporated with a capital of \$50,000, by H. D. Bloch, H. B. Carlson and others.

DES MOINES, IOWA.—A new plant to cost \$100,000 is contemplated by the Pittsburgh-Des Moines Steel Co. The plant will be 135 x 300 feet.

DES MOINES, IOWA.—The Great Western Iron & Steel Mfg. Co. has been incorporated with \$500,000 capital, by M. J. Holland, K. M. Holland and others.

NEWTON, IOWA.—The Automatic Washing Machine Co., H. Ong, president, will build a 4-story plant, 50 x 148 feet, costing \$180,000.

KANSAS CITY, MO.—Work is expected to be started soon by the Milwaukee Corrugating Co. on a new plant, 2-stories, 168 x 250 feet.

McALESTER, OKLA.—The O. K. Boiler, Welding & Machine Works recently was incorporated by G. H. Denney, Frank Godfrey, Mary A. Evans and others, with a capital of \$75,000.

MUSKOGEE, OKLA.—The Muskogee Iron Works contemplates the expansion of its plant at an estimated cost of \$50,000.

TORONTO, KANS.—Bids will be received until Feb. 10 by T. L. Church, chairman of the board of control, city hall, for one or more 16,000,000 to 20,000,000 gallon centrifugal pumps.

Iron and Steel Prices

Corrected to Tuesday Noon

Iron Ore

Superior Ores, Per Ton, Lower Lake Ports	
Old range Bessemer, 55 iron.....	\$6.45
Mesabi Bessemer, 55 iron.....	6.20
Old range non-Bess., 51½ iron.....	5.70
Mesabi non-Bess., 51½ iron.....	5.55

Manganese Ore

Brazilian, 45 to 50 per cent, c.l.f. Atlantic ports, 60c per unit, nominal.	
Indian, 45 to 50 per cent, c.l.f. Atlantic ports, 60c per unit, nominal.	

Warehouse Prices

Steel bars, Boston.....	4.00c
Steel bars, Chicago.....	3.37c
Steel bars, Cleveland.....	3.27c to 3.52c
Steel bars, Detroit.....	3.33c
Steel bars, Philadelphia.....	3.75c
Steel bars, New York.....	3.37c to 3.62c
Steel bars, St. Louis.....	3.44c
Steel bars, Cincinnati.....	3.58c
Steel bars, St. Paul.....	3.595c
Steel bars, Buffalo.....	3.515c
Iron bars, Boston.....	4.50c
Iron bars, Buffalo.....	4.25c
Iron bars, Chicago.....	3.37c
Iron bars, Detroit.....	3.33c
Iron bars, St. Louis.....	3.44c
Iron bars, Cincinnati.....	3.58c
Iron bars, Philadelphia.....	3.75c
Iron bars, New York.....	4.00c
Shapes, Chicago.....	3.47c
Shapes, Detroit.....	3.43c
Shapes, Boston.....	4.00c
Shapes, St. Louis.....	3.54c
Shapes, St. Paul.....	3.695c
Shapes, New York.....	3.47c
Shapes, Cleveland.....	3.37c to 3.62c
Shapes, Philadelphia.....	3.70c
Shapes, Buffalo.....	3.46½
Shapes, Cincinnati.....	3.68c
Plates, Buffalo.....	3.605c
Plates, Chicago.....	3.67c
Plates, Detroit.....	3.63c
Plates, Boston.....	3.95c
Plates, St. Louis.....	3.74c
Plates, St. Paul.....	3.895c
Plates, New York.....	3.67c
Plates, Cleveland.....	3.57c to 3.82c
Plates, Philadelphia.....	3.90c
Plates, Cincinnati.....	3.80c
No. 10 blue anl. sheets, N. Y.....	5.07c to 6.00c
No. 10 blue anl. sheets, Phila.....	5.25c
No. 10 blue anl. sheets, Chicago.....	4.57c to 4.82c
No. 10 blue anl. sheets, Cleveland.....	5.35c
No. 10 blue anl. sheets, Boston.....	5.30c
No. 10 blue anl. sheets, Buffalo.....	4.815c
No. 10 blue anl. sheets, St. L.....	4.89c
No. 10 blue anl. sheets, Cincinnati.....	4.78c
No. 10 blue anl. sheets, St. Paul.....	4.79c
No. 10 blue anl. sheets, Detroit.....	4.53c
No. 28 black sheets, Chicago.....	5.62c to 6.00c
No. 28 black sheets, New York.....	6.25c to 7.50c
No. 28 black sheets, Phila.....	6.50c to 6.59c
No. 28 black sheets, Cleveland.....	6.15c
No. 28 black sheets, Boston.....	7.65c
No. 28 black sheets, Cincinnati.....	4.93c
No. 28 black sheets, Detroit.....	5.58c
No. 28 black sheets, St. Louis.....	6.10c
No. 28 black sheets, St. Paul.....	5.845c
No. 28 black sheets, Buffalo.....	6.25c
No. 28 galv. sheets, Chicago.....	6.97c to 7.50c
No. 28 galv. sheets, New York.....	7.50c to 9.50c
No. 28 galv. sheets, Phila.....	7.50c to 10.00c
No. 28 galv. sheets, Boston.....	9.00c
No. 28 galv. sheets, Cleveland.....	7.50c
No. 28 galv. sheets, Cincinnati.....	6.28c
No. 28 galv. sheets, Detroit.....	6.93c
No. 28 galv. sheets, Buffalo.....	7.50c
No. 28 galv. sheets, St. Louis.....	7.60c
Bands, New York.....	4.22c
Bands, Boston.....	5.20c
Bands, Detroit.....	4.03c
Bands, Buffalo.....	4.315c
Hoops, Buffalo.....	4.315c
Hoops, Boston.....	5.45c
Hoops, New York.....	4.47c
Hoops, Detroit.....	4.03c
Cold rolled shafting, Buffalo.....	4.85c
Cold rolled shafting, New York.....	5.00c
Cold rolled flats, squares and hexagons, New York.....	5.50c

Sheet Schedule—(Black)

Differentials for gage, per 100 pounds.	
No. 30.....	+20c
No. 29.....	+10c
No. 28 (carloads).....	Base
No. 27.....	-05c
Nos. 25-26.....	-10c

Nos. 22-24.....	-15c
Nos. 17-21.....	-20c
Nos. 15-16.....	-25c
Nos. 13-14.....	-30c
Nos. 10-12.....	-35c

Standard Sizes
Gages Nos. 12 to 30 inclusive, 24, 26, 28 and 30 inches wide by 72, 84, 96 and 120 inches long. Gages Nos. 14 to 28 in addition to the foregoing, 36 wide by 96 inches and 120 inches long. Extras for width and length to be added.

Galvanized and Long Terne

Differentials for gage, per 100 pounds.	
No. 30.....	+50c
No. 29.....	+25c
No. 28 (carloads).....	Base
No. 27.....	-15c
Nos. 25-26.....	-30c
Nos. 23-24.....	-45c
Nos. 17-21.....	-60c
Nos. 15-16.....	-75c
Nos. 12-14.....	-90c
Nos. 10-11.....	-1.00

Standard Sizes
Gages Nos. 12 to 30 inc., 24, 26, 28, 30 and 36 in. wide by 72, 84, 96 and 120 in. long. Extras for width and length to be added.

Freight Rates, Pig Iron

Mahoning and Shenango valleys to:	
Cleveland.....	\$1.40
Newark, N. J.....	4.80
Boston.....	5.20
Philadelphia.....	4.40
Pittsburgh.....	1.40
St. Louis.....	4.60
Minneapolis, St. Paul.....	5.70
Buffalo to:	
Albany, N. Y.....	\$1.80
New England (rail).....	3.90
New York and Brooklyn (rail).....	3.90
Virginia furnaces to:	
Philadelphia.....	\$4.10
New England.....	4.70
Brooklyn, Jersey City, Newark.....	4.40
Birmingham, Ala., to:	
Boston.....	\$8.00
Cincinnati.....	3.60
Chicago.....	5.00
Cleveland.....	5.00
Louisville, Ky.....	3.30
Minneapolis, St. Paul.....	7.30
New York.....	7.70
Philadelphia.....	6.50
Pittsburgh.....	5.70
Savannah, Ga.....	3.40
Chicago to:	
St. Louis.....	\$4.25
Des Moines.....	3.50
Minneapolis, St. Paul.....	2.50
Milwaukee.....	.60
Moline, Ill.....	1.40
Omaha.....	4.50
St. Louis.....	1.90
Ironton and Jackson, O., to:	
Chicago.....	\$3.80
Cincinnati.....	1.80
Cleveland.....	2.40
Detroit.....	.60
Indianapolis.....	2.30
Minneapolis, St. Paul.....	5.70

Freight Rates, Finished Material

Pittsburgh, carloads, per 100 lbs., to:	
New York.....	27.0 cents
Philadelphia.....	25.0 cents
Boston.....	30.0 cents
Buffalo.....	21.5 cents
Baltimore.....	23.0 cents
Cleveland.....	17.0 cents
Cincinnati.....	23.0 cents
Chicago.....	27.0 cents
Detroit.....	23.0 cents
Minneapolis and St. Paul.....	49.5 cents
Denver.....	\$1.09
St. Louis.....	33.5 cents
New Orleans.....	38.5 cents
Birmingham.....	57.5 cents
Pacific coast (all rail).....	1.25
Pacific coast (tin plate).....	1.25

Blue Annealed

Differential for gage per 100 pounds	
Nos. 8 and heavier.....	- 5c
Nos. 9 and 10 (carloads).....	Base
Nos. 11 and 12.....	+ 5c
Nos. 13 and 14.....	+10c
Nos. 15 and 16.....	+20c

Standard Sizes
Widths—24-26-28-30-36 and 48 inches.
Lengths—72-84-96-120 and 144 inches.
Extras for width and length to be added.

Tubular Goods Steel Pipe

Pittsburgh basing discounts to jobbers in carloads

STANDARD WEIGHT		
Butt Weld		
½, ¾ and 1-inch.....	Black	Galv.
.....	50½	24
.....	54½	40
.....	57½	44
Lap Weld		
2-inch.....	50½	38
2½ to 6-inch.....	53½	41
7 to 12-inch.....	50½	37
13 to 14-inch.....	41	..
15-inch.....	38½	..
PLUGGED AND REAMED		
Butt Weld		
1 to 3-inch.....	55½	42
2-inch.....	48½	36
Lap Weld		
2½ to 6-inch.....	51½	30
EXTRA STRONG PLAIN ENDS		
Butt Weld		
½, ¾ and 1-inch.....	46½	29
.....	51½	39
.....	55½	43
.....	56½	44
Lap Weld		
2-inch.....	48½	37
2½ to 4-inch.....	51½	40
4½ to 6-inch.....	50½	39
7 to 8-inch.....	46½	33
9 to 12-inch.....	41½	28
DOUBLE EXTRA STRONG PLAIN		
Butt Weld		
½-inch.....	42½	32
¾ to 1½-inch.....	45½	35
2 to 2½-inch.....	47½	37
Lap Weld		
2-inch.....	40½	31
2½ to 4-inch.....	42½	33
4½ to 6-inch.....	41½	32
7 to 8-inch.....	36½	23

Wrought Iron Pipe

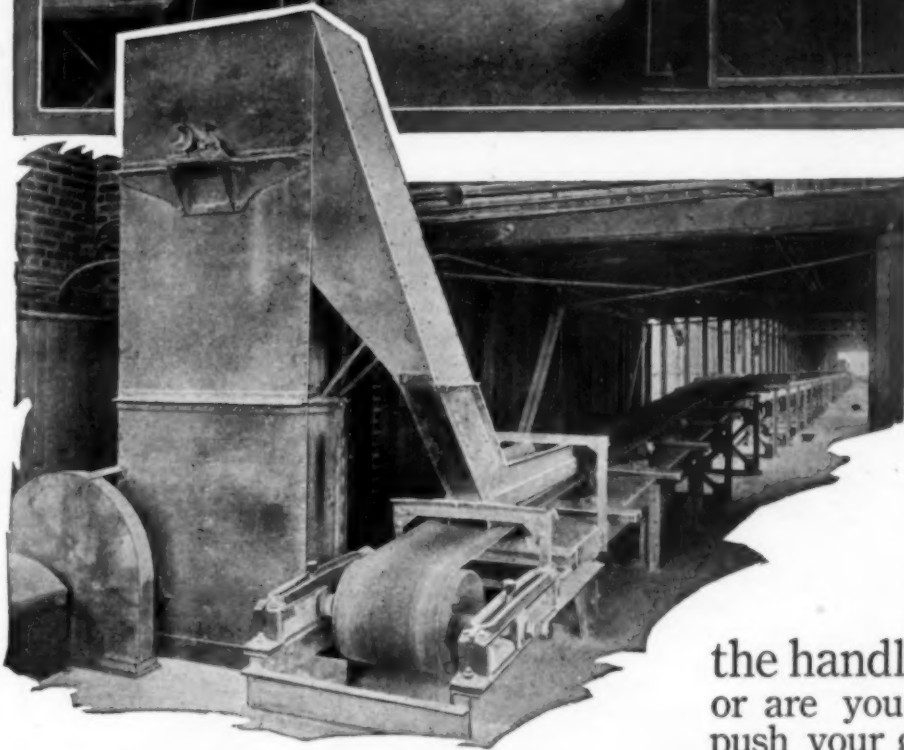
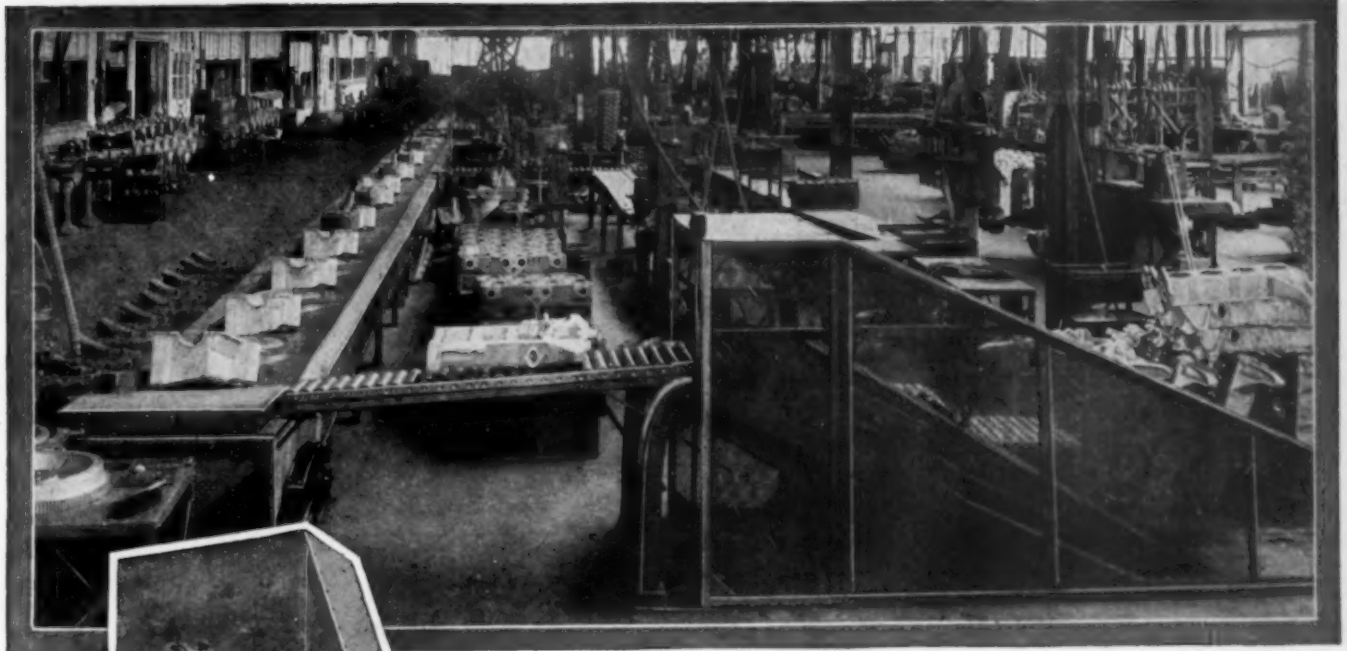
Pittsburgh basing discounts to jobbers in carloads

THREADS AND COUPLINGS		
Butt Weld		
½-inch.....	Black	Galv.
.....	1	+14
.....	24½	+ 2½
.....	25½	+ 1½
.....	29½	11½
.....	34½	18½
Lap Weld		
2-inch.....	28½	14½
2½ to 6-inch.....	30½	17½
7 to 12-inch.....	27½	14½
PLUGGED AND REAMED		
Two points less than above		
EXTRA STRONG PLAIN ENDS		
Butt Weld		
½, ¾-inch.....	+21	+36
.....	23½	6½
.....	28½	15½
.....	34½	19½
Lap Weld		
2-inch.....	29½	16½
2½ to 4-inch.....	31½	19½
4½ to 6-inch.....	30½	18½
7 and 8-inch.....	22½	10½
9 and 12-inch.....	17½	5½
DOUBLE EXTRA STRONG PLAIN ENDS		
Butt Weld		
½-inch.....	Black	Galv.
.....	15½	3½
.....	20½	8½
Lap Weld		
2-inch.....	16½	4½
2½ to 4-inch.....	18½	9½

Lapweld Boiler Tubes

Discounts off manufacturers' standard list, in carloads; less carloads, 4 points less.

Steel	
1½ and 2-inch.....	19
2½-inch.....	24
2½ to 3½-inch.....	30½
3½ to 4½-inch.....	40½
Iron	
1½-inch.....	+20
2 and 2½-inch.....	+10
2½ and 3½-inch.....	+ 1
3 and 3½-inch.....	- 1½
3½ to 4½-inch.....	-16



Increase Your Production By Using Link-Belt Labor-Saving Conveyors

DO you employ modern labor-saving conveyors in the handling of your products-- or are you still using hand-labor to push your goods from place to place?

Production can be increased, manufacturing costs reduced and more contented workers developed by employing efficient modern Link-Belt labor-saving conveyors. Labor is scarce; therefore, employ YOURS to the best advantage.

We are specialists in designing and building mechanical conveyors for handling all materials, under practically all conditions. Our equipment can be found in almost every American Industry. Probably we can help you, as we have helped others. Get in touch with our nearest office. Catalog on request.

LINK-BELT COMPANY

875

PHILADELPHIA	CHICAGO	INDIANAPOLIS
New York 299 Broadway	Kansas City, Mo. 908 Elmhurst Bldg.	Seattle 571 First Ave. S.
Boston 49 Federal St.	Portland, Ore. First and Stark Sts.	San Francisco 582 Market St.
Pittsburgh 1501 Park Bldg.	San Francisco 582 Market St.	Los Angeles 163 N. Los Angeles St.
St. Louis Central Nat'l Bank Bldg.	Toronto, Can. Canadian Link Belt Co. Ltd.	Denver, Linderooth, Shubert & Co., Poston Bldg.
Buffalo 547 Ellicott Square	Louisville, Ky. F. Webb, Starks Bldg.	New Orleans C. O. Hinz, Hibernia Bank Bldg.
Wilkes-Barre 2nd Nat'l Bank Bldg.	Birmingham, Ala. E. L. Morrow, 729 Brown-Marx Bldg.	
Huntington, W. Va. Robson-Prichard Bldg.		
Cleveland 429 Rockefeller Bldg.		
Detroit 922 Dime Bank Bldg.		

LINK-BELT

LABOR-SAVING CONVEYORS

Say you saw it in THE IRON TRADE REVIEW

Iron and Steel Scrap Prices

Corrected to Tuesday Noon

Steel Works Scrap

Gross Tons Delivered to Consumer

HEAVY MELTING STEEL

Pittsburgh	\$26.00 to 27.00
Chicago	24.25 to 24.50
Eastern Pennsylvania	24.50 to 25.00
Cleveland	25.00 to 26.00
St. Louis	25.00 to 25.50
Buffalo	25.00 to 26.00
New York (dealers)	20.00 to 20.50
Cincinnati	20.50 to 22.00
Birmingham	24.00 to 25.00
Valleys	25.50 to 26.00
Boston (dealers)	18.50 to 19.00

BUNDLED SHEETS

Pittsburgh	18.00 to 19.00
Eastern Pennsylvania	19.00 to 20.00
Cleveland	17.00 to 17.50
Buffalo	18.00 to 19.00
Cincinnati	14.50 to 15.00
St. Louis	14.00 to 14.50

STEEL RAILS, SHORT

Chicago	\$28.50 to 29.00
Boston (dealers)	16.00 to 17.00
Cleveland	24.00 to 24.50
St. Louis	29.00 to 29.50
Birmingham	25.00 to 26.00
Cincinnati	16.00 to 16.50
Eastern Pennsylvania	22.50 to 23.00

STOVE PLATE

Pittsburgh	\$24.00 to 25.00
Chicago	33.00 to 33.50
Eastern Pennsylvania	26.00 to 27.00
Cleveland	29.00 to 30.00
St. Louis	32.00 to 32.50
Buffalo	24.00 to 24.50
New York	22.00 to 22.50
Cincinnati	20.00 to 21.00
Birmingham	25.00 to 26.00
Boston	26.50 to 27.50

LOW PHOSPHORUS

Pittsburgh, billet and bloom crops	\$31.00 to 32.00
Chicago, billet and bloom crops	24.00 to 25.00
Eastern Penn. (guaranteed)	28.00 to 30.00
Buffalo	32.00 to 33.00

SHOVELING STEEL

Chicago	\$24.00 to 24.25
St. Louis	24.00 to 24.50

KNUCKLES, COUPLERS AND SPRINGS

Pittsburgh	\$26.50 to 27.50
Chicago	28.00 to 28.50
St. Louis	27.50 to 28.00

BALED SHEETS

Pittsburgh	22.00 to 23.00
Chicago	19.50 to 20.00

FROGS, SWITCHES, GUARDS

Chicago	\$24.50 to 24.75
St. Louis	25.00 to 25.50
Eastern Pennsylvania	23.00 to 23.50

BOILER PLATE, CUT

Chicago, No. 1	\$20.50 to 21.00
St. Louis	18.00 to 18.50

ANGLE BARS—STEEL

Chicago	\$27.50 to 28.00
St. Louis	28.00 to 28.50

Iron Mill Scrap

Gross Tons Delivered to Consumer

RAILROAD WROUGHT

Pittsburgh, No. 1	\$28.00 to 28.50
Pittsburgh, No. 2	25.00 to 25.50
Chicago, No. 1	29.50 to 30.00
Chicago, No. 2	27.00 to 27.50
Eastern Pennsylvania, No. 1	33.00 to 35.00
Cleveland, No. 1	25.00 to 26.00
St. Louis, No. 1	27.50 to 28.00
St. Louis, No. 2	26.50 to 27.00
Buffalo	28.00 to 29.00
Cincinnati, No. 1	21.00 to 21.50
Birmingham, No. 1	22.00 to 23.00
New York, No. 1 (dealers)	29.50 to 30.00
Boston (dealers)	27.00 to 28.00

WROUGHT PIPE

Eastern Pennsylvania	\$22.50 to 23.50
Eastern Pennsylvania, ungraded	14.00 to 16.00
Buffalo	19.00 to 20.00
New York (dealers)	19.00 to 19.50
Boston (dealers)	18.00 to 18.25

YARD WROUGHT

Eastern Pennsylvania, No. 1.....\$28.00 to 29.00

CITY WROUGHT

New York, long (dealers)..... 23.50 to 24.00

BUSHELING

Chicago, No. 1	\$25.50 to 26.00
Chicago, No. 2	16.50 to 17.00
Cleveland, No. 1	22.00 to 22.50
Cleveland, No. 2	17.50 to 18.50
St. Louis, No. 1	24.50 to 25.00
Buffalo, No. 1	21.00 to 22.00
Cincinnati, No. 1	20.00 to 20.50
Eastern Pennsylvania, No. 1	20.00 to 21.00

MACHINE SHOP TURNINGS

Pittsburgh	\$16.00 to 16.50
Chicago	13.00 to 13.50
Eastern Pennsylvania	18.50 to 19.00
Eastern Pennsylvania (blast furn.)	21.00 to 22.00
Eastern Pennsylvania (chemical)	27.00 to 30.00
Cleveland	15.00 to 15.25
Buffalo	16.50 to 17.00
New York (dealers)	15.00 to 15.50
St. Louis	15.50 to 16.00
Cincinnati	12.50 to 13.50
Birmingham	14.00 to 15.00
Valleys	16.00 to 16.50
Boston (dealers)	13.50 to 14.00
Boston (blast furnace) (dealers)	13.00 to 13.50

CAST IRON BORINGS

Pittsburgh	\$19.00 to 19.50
Chicago	16.00 to 16.50
Eastern Pennsylvania	23.00 to 25.00
Eastern Pennsylvania (chemical)	23.00 to 26.00
Cleveland	17.50 to 17.75
St. Louis	13.50 to 14.00
Buffalo	20.00 to 21.00
New York (dealers' price)	17.50 to 18.00
Cincinnati	12.00 to 13.00
Birmingham	13.00 to 14.00
Valleys	19.00 to 19.50
Boston (dealers)	18.00 to 18.50
Boston (blast furnace) (dealers)	12.50 to 13.00

IRON AXLES

Pittsburgh	\$44.00 to 45.00
New York (dealers)	47.00 to 48.00
Chicago	39.50 to 40.50
Eastern Pennsylvania	45.00 to 46.00
Cleveland	41.00 to 42.00
St. Louis	39.00 to 39.50
Buffalo	40.00
Cincinnati	29.50 to 30.00
Birmingham	25.00 to 27.00

IRON RAILS

Chicago	32.50 to 33.00
Cleveland	29.50 to 30.50
St. Louis	29.00 to 29.50
Buffalo	28.00 to 29.00
Cincinnati	25.00 to 25.50

PIPES AND FLUES

Chicago	22.50 to 23.00
Cleveland	21.00 to 22.00
St. Louis	22.00 to 22.50
Cincinnati	15.00 to 16.00

GRATE BARS

Chicago	33.00 to 34.00
Cleveland	29.00 to 30.00
Buffalo	24.00 to 25.00
New York	25.00 to 26.00
Eastern Pennsylvania	26.00 to 27.00

FORGE FLASHINGS

Cleveland, large	\$19.00 to 19.50
Cleveland, small	20.00 to 21.00
Chicago, small	20.50 to 21.00
Boston (dealers)	14.00 to 15.00

FORGE SCRAP

Chicago	27.00 to 27.50
Eastern Pennsylvania, No. 1	18.00 to 19.00
Boston	14.50 to 15.00

ARCH BARS AND TRANSOMS

Chicago	33.50 to 34.00
St. Louis	32.50 to 33.00

ANGLE BARS—IRON

Chicago	33.00 to 33.50
St. Louis	26.00 to 26.50

Iron and Steel Works Scrap

Gross Tons Delivered to Consumer

AXLE TURNINGS

Pittsburgh	\$19.50 to 20.00
Eastern Pennsylvania	19.00 to 20.00
Boston (dealers)	15.00 to 16.00
St. Louis	18.50 to 19.00

Cleveland	20.00 to 21.00
Buffalo	20.50 to 21.00
Chicago	20.00 to 21.00

STEEL CAR AXLES

Pittsburgh	\$34.00 to 35.00
Eastern Pennsylvania	35.00 to 36.00
Cleveland	37.50 to 38.50
St. Louis	37.00 to 37.50
Buffalo	40.00
Chicago	35.50 to 36.00
New York (dealers)	39.00 to 40.00
Birmingham	33.00 to 34.00
Boston (dealers)	27.00 to 28.00

SHAFTING

Eastern Pennsylvania	\$34.00 to 36.00
St. Louis	33.00 to 33.50
New York (dealers)	28.00 to 29.00
Chicago	32.50 to 33.00

Iron Foundry Scrap

Gross Tons Delivered to Consumer

CAR WHEELS

Pittsburgh, iron	\$33.00 to 34.00
Pittsburgh, steel	26.50 to 27.00
Chicago, iron	36.50 to 37.00
Eastern Pennsylvania, iron	36.00 to 38.00
Cleveland, iron	32.00 to 33.00
St. Louis, iron	32.50 to 33.00
Buffalo, iron	33.00 to 34.00
Birmingham, iron	24.00 to 26.00
Birmingham, tram car	23.00 to 24.00
Boston	30.00 to 31.00
Cincinnati	23.00 to 24.00

NO. 1 CAST SCRAP

Pittsburgh, cupola	\$32.00 to 33.00
Chicago, cupola	42.00 to 42.50
Eastern Pennsylvania, cupola	36.00 to 38.00
Cleveland, cupola	34.00 to 35.00
New York, cupola (dealers)	35.00 to 36.00
Cincinnati, No. 1, cupola	30.00 to 30.50
Birmingham, cupola	29.00 to 30.00
St. Louis, railroad	33.50 to 34.50
St. Louis, agricultural	33.50 to 34.00
Buffalo	31.00 to 32.00
Boston	36.50 to 37.00
Valleys	33.50 to 34.50

HEAVY CAST

New York (dealers)	\$31.00 to 32.00
Buffalo	27.00 to 28.00
Pittsburgh	26.00 to 27.00
Cleveland	24.50 to 25.00
Boston	31.00 to 32.00

MALLEABLE

Pittsburgh, railroad	\$27.00 to 28.00
Pittsburgh, agricultural	25.00 to 25.50
Chicago, railroad	32.00 to 32.50
Chicago, agricultural	32.00 to 32.50
Eastern Pennsylvania, railroad	25.00 to 25.50
Cleveland, railroad	31.50 to 32.50
Cleveland, agricultural	26.50 to 27.00
St. Louis, railroad	29.00 to 29.50
St. Louis, railroad	28.00 to 28.50
Cincinnati, railroad	27.00 to 27.50
Cincinnati, agricultural	27.00 to 27.50
Boston, railroad	21.50 to 22.00
Buffalo	26.00 to 27.00

Miscellaneous Scrap

Gross Tons Delivered to Consumer

REROLLING RAILS 5 feet and over

Pittsburgh	\$32.00 to 33.00
Chicago	33.50 to 34.00
Eastern Pennsylvania	34.00 to 35.00
Cleveland	33.00 to 34.00
St. Louis	34.00 to 34.50
Birmingham	28.00 to 29.00
Boston (dealers)	27.00 to 28.00

LOCOMOTIVE TIRES

Chicago	29.00 to 30.00
St. Louis	27.00 to 27.50

BOILER PUNCHINGS

Chicago	28.50 to 29.00
Eastern Pennsylvania	27.00 to 28.00

When the Scrap Market Is Dull

While seeking a more favorable market the best form in which to hold your sheet scrap, etc., and the form that always commands the best prices is the dense hydraulically compressed bundle.

Thus less storage space is required—under roof to prevent loss from corrosion; and because of greater car tonnage under minimum car rate, you add from 25% to 50% freight savings to your profits.

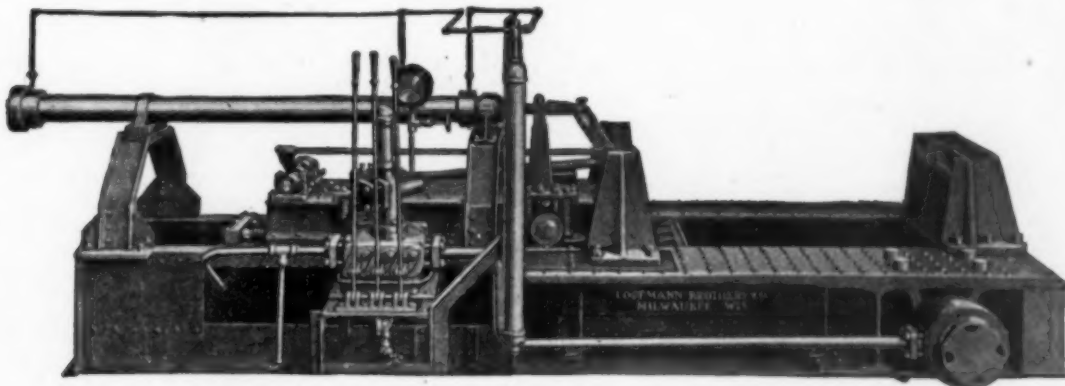
For greatest compression, largest daily output, at lowest operating cost, use

LOGEMANN Double Ram Hydraulic Scrap Metal PRESSES

You can enjoy the advantage of the accumulated experience from hundreds of Logemann scrap bundling presses now in use.

They embody a simplified mechanism that requires no special skill to operate rapidly. Press and pump are so designed that all the motive power applied is utilized, thus reducing power cost.

Powerfully built, all working parts constructed to resist the severest strains—selected material, first class workmanship—all minimize upkeep cost and insure lasting efficiency.



A medium sized press is shown; there are smaller and larger sizes in standard models.

Advise character and daily tonnage of your scrap and let us suggest press best suited to your requirements.

Logemann Brothers Co.

3126 Burleigh Street
Milwaukee, Wis.

Builders of Baling Presses and Hydraulic Machinery

New Trade Publications

UNIVERSAL JOINT.—The Universal Products Co., Detroit, recently published a booklet containing testimonials from users of universal joints made by the company. Practically all of the letters are from members of the automotive trade.

CRANES.—The Toledo Bridge & Crane Co. has published an illustrated booklet on cranes. The illustrations show cranes of various sizes and types in operation. In addition to the illustrations, a list of users and a number of testimonials are given.

FOUNDRY EQUIPMENT.—The W. W. Sly Mfg. Co., Cleveland, is circulating a large cardboard folder, in which recent foundry installations, including a cupola, core ovens, sand blast rooms, dust arrester, exhaust mills and sand blast mills, are described. The descriptions are accompanied by illustrations.

ELECTRIC CRANES.—A bulletin entitled "Lane Electric Cranes," recently was issued by N. B. Payne & Co., 25 Church street, New York, agents for the Lane Mfg. Co., Montpelier, Vt. The bulletin fully describes and illustrates several styles of cranes in which steel girders or heavy timbers are used. The

bulletin contains a complete set of specifications and a list of users. A questionnaire is inserted in the bulletin for the use of prospective buyers.

INDUSTRIAL GLOVES.—Gloves and mittens for use in industrial plants are described and illustrated in a booklet being distributed by the Industrial Gloves Corp., Chicago. These gloves and mittens are made of long fiber chrome tanned leather and are sewed with steel thread. On the parts of the glove which are subject to wear, the surface is reinforced with small ribbons of steel, clinched through the leather in such a way that they cannot hurt the hand or come loose.

DERRICKS.—Derricks and locomotive cranes are described and illustrated in a 40-page booklet being circulated by the Edward F. Terry Mfg. Co., New York. The derricks described include guy derricks, stiff-leg derricks, barge derricks and jinniwink derricks. Various parts of the derricks are also described and illustrated, and complete specifications given. Hoisting engines, contractor locomotive cranes, and cranes designed for various other work, are also described and illustrated in the booklet. The last few pages of

the book contain illustrations of actual crane and derrick installations.

THREAD MILLERS.—The Smalley General Co., Inc., Bay City, Mich., is circulating a 4-page data sheet in which a new policy to be taken by the company in the matter of selling thread millers is announced. In the future all purchasers of these machine tools will have the unquestioned right to cancel the sale in event the machine does not perform and produce according to the company's guarantee. The last page of the folder contains a list of recent purchasers of thread millers.

CRANES.—Cranes adapted for machine shop or similar service are described in a 16-page illustrated booklet recently published by the Toledo Bridge & Crane Co., Toledo, O. In these cranes, the trolley sides are of the I-beam or box section and of semi-steel or cast steel. The sides are joined by a built-up cross girder. The drums are of gray iron and all gears are machined turned and cut from open-hearth steel castings. Other details are presented and the illustrations give the reader a comprehensive idea of the crane.

Business Changes Recently Announced By the Trade

WITH no change in its management or policy, the Joseph Schonthal Iron Co., Columbus, O., has changed its corporate name to the Joseph Schonthal Co., on account of the expansion of its activities. A branch office has been established in Detroit, with temporary offices in suite 68 Buhl building, in charge of William C. Louis.

The Hammond Steel Co., Inc., Syracuse, N. Y., has established a branch office at 912-915 Kresge building, Detroit, in charge of S. M. Wetmore, sales agent.

Cho Ito & Co., and the Ito Enterprising Co., Kobe, Japan, have consolidated under the name of Ito & Co., Ltd., 4 Chome, Kitagasa-Dori, Kobe, Japan. Branch offices are maintained at 1613-15 Sun building, 150 Nassau street, New York city, with S. Nakai, agent, and at 720-25 L. C. Smith building, Seattle, with Y. Kabe, agent.

The Overseas Sales Corp., 50 Union square, New York, has transferred its organization to the European department of Messrs. Huth, Gillespie & Co., Inc. This corporation recently was formed to amalgamate the export busi-

ness of Messrs. Huth & Co., the New York branch of Messrs. Frederick Huth & Co., London, and the New York business of Messrs. Gillespie Bros. & Co., London and New York. From the end of January, the business of the European department of Huth, Gillespie & Co., Inc., will be conducted from 30 Pine street, New York.

The Thomas Spacing Machine Co., Pittsburgh, has bought out the Sidney Power Press Co., Sidney, O.

M. V. Dreyspool has opened offices at 51 Chambers street, New York city, for the purpose of doing an export and domestic business in steel, iron and hardware.

The Mid-West Engine Co., Indianapolis, has opened a Philadelphia office at 305 Stephen Girard building, with Walter H. Eagan in charge. The company sells centrifugal pumps, turbines and oil engines.

The Latrobe Electric Steel Co. has opened an office in the Finance building, Philadelphia, in charge of Edwin M. Ong.

The Northwest Steel Co., Portland, Oreg., is retiring from

business and is being succeeded by the Northwest Bridge & Iron Co., a partnership composed of Messrs. W. H. Cullers, W. R. Bowles and L. R. Banks.

The American Manganese Mfg Co., Bullitt building, Philadelphia, has opened a branch office at 940 to 944 Oliver building, Pittsburgh, in charge of L. S. Kerchner.

The Van Dorn Girder Plate Co., manufacturer of appliances for railway cars, has removed its general offices from 2325 South Paulina street to 608 South Dearborn street, Chicago.

The O. S. Flath Co., Inc., Peoples Gas building, Chicago, has succeeded to the business of the Alger Supply Co.

The name of the Cleveland branch of the Kirk Supply Co., Pittsburgh, was changed on Jan. 1 to the Kirk Supply Co.

The Sizer Forge Co., Buffalo, has opened up a branch sales office at 459 Book building, Detroit, in charge of L. D. Statton.

The Steel Age Mfg. Co., Battle Creek, Mich., has changed its name to the Steel Age Mfg. & Supply Co.